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BILIOUS OR YELLOW FEVER IN HORSES AT LEITH IN 1875.

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Definition.—"A low fever, running a definite and prolonged (continuous) course, liable to exacerbation or remission, and marked by a jaundiced (icteric) condition of the visible mucous membranes, infectious in character, attended by grave complications, and followed by serious results."

Duration.—From four to five days in mild, to three or four weeks in severe cases; average, ten days to twenty-one.

Fatality.—Not great, except where animal had been neglected, overworked, much exposed, or debilitated from previous disease or old age.

Extent.—Commenced in March, violence abated about middle of August; isolated cases occurring as late as October, and even up to the present date.

Course.—Not determinate—broke out at several points simultaneously. On some days four or five cases occurred; then several days, or a week or two, and towards decline three or four weeks, intervened between individual outbreaks. In one

stable four horses out of twelve were attacked; in some stables, one or two only. In some studs it assumed a mild type—solitary cases occurring, and not sufficiently severe to throw animal off work. In other studs its character was very aggravated.

Invasion.—In some cases (especially if lesions primarily localized in lungs or intestines) rapid, in others prolonged; animals working for days with nothing more noticeable than dulness and languor.

Period of Incubation.—Uncertain, but about four or five days as a rule. Did not, except in occasional cases, show such a tendency to the localization of lesions in previously weakened or diseased organs or tissues as did Effusive Fever. The exceptional cases noticed were one of chronic laminitis, one of chronic pulmonary disease, and two or three of inflammatory œdema.

Symptoms.—Premonitory.—Occasionally ushered in by abdominal pain; sometimes by diarrhœa; at other times by pulmonary congestion; otherwise, languor, slight yellowish serous discharge from nostrils, stiffness, inability to undergo exertion, readily perspiring, shivering, slight constipation of bowels, and mucoid fæces, cough, and uneasy movements of limbs, marked the advent of the disease. The pulse, respiration and temperature—unless invasion was violent, or lungs primarily attacked—were not much interfered with.

In two or three days slight defluxion of tears, with yellowness more or less marked (but always present early) of visible mucous membranes, was observed. The coat was staring and dry. The following tables indicate the characters and state of the pulse, respiration and temperature in three cases:—

No. 1, an old grey cart-horse, had already suffered from several attacks of Influenza, and was the subject of Elephantiasis as the result of repeated attacks of acute œdema: *died.*

No. 2, a valuable horse, seven years old, in good healthy condition. Typical case, though aggravated by pleuritic complications and effusion into pulmonary parenchyma: *recovered.*

No. 3, a valuable cart-horse, eight years old, purchased five days previously for £140, in prime condition and without fault or blemish. The lungs were never attacked in this case, but

there was a copious discharge of pus from the nose throughout. Occasionally the discharged material resembled masses of broken up cheese. The appetite was good.

The acute symptoms were succeeded by relapsing Purpura Hæmorrhagica, and three months' illness followed, from which he *recovered*, and *did well*.

No. 1.

June 23rd.	24th.		25th.		26th.		27th.	
p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
R.—nat.	16	18	20	30	18	20	24	40
P.— 60	64	72	70	70	72	80	84	82
T.—103⅜	104⅜	107	105⅜	105⅝	104	106½	105	rusty discharge

June 28th.		29th.		30th.		July 1st.	
a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
R.— 42	34	40	48	48	36	48	42
P.— 84	78	72	78	86	82	84	76
T.— —	103⅛	104⅛	104⅝	103⅜	103⅛	102⅛	101⅛

No. 2.

June 15th.	16th.		17th.		18th.		19th.	
p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
R.— 28	32	32	30	36	32	44	28	36
P.— 80	76	84	76	76	60	60	60	60
T.—105½	106	107⅜	105½	105	104	104½	104	103⅛

June 20th.	21st.	22nd.	23rd.	24th.
a.m.	a.m.	a.m.	a.m.	a.m.
R.— 28	28	18	16	12
P.— 56	60	54	52	40*
T.—101⅛	102⅛	101⅛	101⅛	101

No. 3.

June 23rd.		24th.		25th.		26th.		27th.	
a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.
R.— 14	18	18	16	16	18	18	20	14	16
P.— 68	76	76	72	72	72	64	76	72	74
T.—105⅜	105⅛	105⅜	106	105⅜	105⅛	104⅜	106	104½	—

June 28th.		29th.		30th.		31st.	July 1st.	2nd.	3rd.
a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	p.m.	p.m.
R.— 13	13	14	13	12	12	12	13	12	8
P.— 64	60	60	54	58	60	60	56	50	53
T.— —	103⅛	102⅛	102⅛	103⅛	103⅜	103⅛	102⅜	102⅛	102⅛

* Intermittent, and remained so for some days.

From the above carefully recorded tables, it will be observed that in No. 1 the respiration was natural on the first day, though the pulse and temperature were increased, and continued to increase up to the fifth day; the pulse, with some variation, remaining high to the end, but the temperature gradually declining up to the 30th, afterwards rapidly lowering, and continuing to do so up to his death, which took place about the 3rd of July.

The respiration kept gradually increasing in frequency up to the 27th, then suddenly mounted high and remained so. Coincidently with the increase in the respiration, the mucous membranes became dark in colour, the appetite suspended, and a flow of yellowish fluid (afterwards becoming rusty and finally bloody and fœtid) took place from the nostrils. Auscultation revealed *general Pneumonia*. About the third day the usual discharge from a chronic eczematous leg commenced to flow, and became unbearably fœtid in spite of disinfectants. This animal was probably ill two days before I saw him, though the illness was not pronounced. Diarrhœa set in as the disease advanced.

No. 2.—It was acknowledged that this animal had been dull and heavy a day or two prior to the 15th June. The pleuritic complications were well marked. Pulmonary effusion took place on the fifth day; and afterwards, as shown by the table, the respiration bore no relation to the pulse and temperature. The appetite was indifferent for the first five days; afterwards it rapidly improved, and a good recovery was made. The pulse remained intermittent for a short time, and the cough, which was very irritable, was not relieved for a week or more.

No. 3 had been observed to present symptoms of ordinary cold for a day or two, but it was not until his appetite failed, on the 23rd, that my attention was especially directed to him. The appetite in this animal was also indifferent for the first five or six days, when it improved and remained very good up to the 5th of July—the date of the first appearance of Purpura Hæmorrhagica. On this day, and for a few days after, the pulse and temperature ran very high, then gradually declined as the purpuric symptoms disappeared, again rising with each relapse.

The respiration never rose above 20, and only attained that number once—viz., on the evening of the 20th; the throat was excessively sore and cough irritable; the bowels were regular. It will be observed that the temperature attained its greatest elevation in Nos. 1 and 2 on the evening of the second day, and in No. 3 on the evenings of the second and fourth days. The mucous membranes in No. 3 never became very dark (venous) in colour, but remained of a yellow tinge throughout, and after the first relapse of Purpura became absolutely bloodless. The Purpura was treated with $FeSo_4$ and $CuSo_4$, Cantharides and Capsicum, morning and night, with Potassium Iodide in the middle of the day, and injections of Ol. Tereb. once a day. Milk, eggs, whisky, and porter were also freely administered; and under this treatment he progressed satisfactorily until an excessively cold stormy night came on, with east and north-east winds, when he relapsed; then again gradually improved for four or five days, when I determined, as Hæmorrhagic symptoms were marked, to substitute Secale Cornutum and Quinine, with Ol. Tereb., for the mineral tonics. This treatment was persisted in for two days with marked effect,—the swellings subsiding rapidly, and the temperature declining from 105° to 102°; but observing that he was visibly emaciating, I substituted Iodine for the Secale, but derived no benefit from it, and after two or three doses and the advent of another storm, he again relapsed, the symptoms being more serious than ever, and from the condition of the throat and the swelling of the face, no nutriment could be administered through the mouth, neither would he voluntarily eat much food. I compensated for this by throwing up nutrient enemata; and again recurring to the use of Secale, I had the satisfaction of seeing him gradually improve. After about ten days I substituted Arsenic for the Secale, and a few days subsequently Nux Vomica for the Quinine. A little œdema of the sheath remained for some time, and there was also considerable pruritis and desquamation of epidermis.

The acute febrile symptoms in the majority of the cases attained their climax about the fifth day—in some remaining stationary for three or four days, then gradually declining. If Pleurisy supervened, the pulse assumed a pleuritic character, the

mucous membranes became scarlet in colour, and the legs were constantly moved in an uneasy manner; and if the animal was made to progress, the usual expressive grunt was emitted. On auscultation pleuritic sounds were detected with the evincing of pain on palpation; the fæces became glazed, scanty and dry, If congestion of the lungs supervened, the usual symptoms of this condition became developed.

Pulmonary effusion occurred about the fifth day, and was readily detected by a fall in the temperature and pulse, and by the breathing becoming more laboured and less hurried; all the acute symptoms were relieved on the advent of the effusion, the appetite (if in abeyance) returned, and the mucous membranes remained icteric, but not injected; by auscultation the extent of the effusion and its gradual subsequent subsidence could be measured; the laboured breathing gradually became relieved as the effusion was removed (usually about a week or ten days). No animal in which the fever was well marked assumed the recumbent position, but all stood obstinately until the fever abated; in slight cases recubation was never arrested. Irritants—unless inflammation of the pleuræ or lungs was violent—acted freely. The emaciation was not so great as in the majority of epizoötics of the same character; but pruritis and desquamation of the cuticle were constant attendants on convalescence—the icterus continuing in some cases for weeks. In many cases the poison appeared to be eliminated by the kidneys—the urine being copious and loaded with sedimentary matter—and in these cases recovery was more rapid than in those in which the urine was scanty and clear.* One animal, a valuable black cart-gelding, was brought to me with a pulse of 90, respiration 36, temperature 105°, mucous membranes of a deep orange hue, and the appetite totally lost. (Pleurisy) disease had been noticed three days, during the whole of which time the horse was made to perform an amount of work greater even than on ordinary occasions when in health. Two previous attacks of Influenza were recorded in my memory against this horse, in both of which lung

* No abnormality was discovered in the blood; but in the nasal discharge of one animal I discovered numerous bacteria, to the presence of which I did not attribute much importance, as they may have been derived from external sources.

complications were present, and in which lung lesions (permanent) resulted.

This case—as I had no hesitation in predicting to the owner on the first examination—went steadily and speedily on to very extensive *Hydrothorax* and *Hydrops Pericardii*, with unhealthy pleural adhesions and breaking up of the originally injured portions of lung structure, and the formation of vomicæ in them. The liver was two or three times its natural size, very solid, and abnormally pale in colour—transverse section showing an appearance which I never saw before in this organ: the whole of the acini being beautifully mapped out by the deposition of green colouring matters of the bile in the interlobular spaces. The tissues of the body were universally icteric.

Another animal, an old (26 years) grey coach-horse, I was asked to look at one Sunday morning. I found him on his side (a position in which he had been some hours), struggling violently, with all the constitutional symptoms of "Bilious fever" well marked—the respiration, however, being comparatively quiet, the eye bright, and the appetite, during the intermissions of pain, good. On raising him by the aid of slings, total Paraplegia was at once discovered. I attended to him and relieved his pain for two or three days (he was a great favourite), when, no alleviation taking place, he was by my advice destroyed. In this case all the tissues and mucous membranes were of a deep orange-red colour. I did not examine the internal organs.

A third animal (a bay hack gelding, five years old) my attention was directed to before death. The history of this case disclosed previous spinal injury (from which, however, a tolerable recovery had been made), and a variety of other troubles. I was informed that the animal had been ill about a week, that he had been attended—or rather neglected—by a farrier, who had not been to see his patient for two days until within an hour or two of my being sent for, when he stated that the horse was in a fit; and after a partially successful attempt to administer a dose of physic in solution, he left without further ceremony. I found the animal lying on his near side, constantly struggling with the fore, but perfectly incapable of moving the hind limbs, and every few minutes straining violently and rolling the eyes (which were

very prominent) wildly about; the muscles of the face were variously contorted, the mucous membranes of an orange-red hue, the pulse oppressed and scarcely distinguishable. The peculiarity of the symptoms led me at once to examine the condition of the bladder—which viscus I found distended to its utmost limits, the slightest pressure upon it bringing about violent convulsions and straining. Inquiry further elicited the fact that the poor beast had lain on the one side for two days, and that no attempt had been made to relieve the bladder—indeed, it had not been thought of. Despatching a messenger for my catheter, I determined upon altering the position of the horse; this was done with very great care, in order to avoid rupture of the bladder, but not without inducing convulsions and straining. On the return of the messenger, in about three parts of an hour, I administered a draught composed of Tinct. Opii, Spts. Æth. Nit. et Ammon. Carb. Sol., and passed the catheter—an immense quantity of dark thick urine making its escape. When the bladder had been emptied of about two-thirds of its contents the animal commenced to kick violently, the eyes began to roll, and the heart to palpitate so strongly as to visibly raise the walls of the chest—its sounds being heard some yards distant; the superficial veins became distended, and stood out upon the surface of the skin like cords, death following in a few minutes after the development of these symptoms. Autopsy revealed a similar condition in this case to that which was seen in the black gelding, with the exception of the lungs and pleuræ being healthy; the brain also was perfectly normal in its structure; the mucous membrane of the bladder was thickened and inflamed.

Treatment.—In all cases mild aperients—as oil, sulphate of magnesia, or calomel—were administered at the outset, followed by the free use of carbonate of ammonia, repeated once, twice, or thrice a day, according to the urgency of the case, with the addition of aconite when the feverish symptoms ran high. Belladonna or digitalis were borne very indifferently, and were only administered in one or two cases, and only for two or three doses.

Each case was studied and treated according to the especial

symptoms and complications which it presented, or by which it was accompanied—no hard and fast line being laid down for every case; flying blisters were occasionally applied, and with marked benefit, and after their use the hot sheet was in some cases brought into requisition, especially if the patient showed much irritation on the application of a stimulant. The flying blisters were had recourse to with marked benefit in two or three instances, after fomentations had failed to give relief.

Counter-irritants were always of great value in promoting the absorption of pulmonary effusion, and in determining the intensity of the lung complications. Hygiene was strictly attended to. Stimulants, especially whisky, ale and stout, were freely given when the appetite was lost and the fever high, and were continued on to convalescence; eggs, malt mashes, gruel, boiled barley and grass were also supplied judiciously. One case dated recovery from the horse having been made (unintentionally) inebriated, and another after the free development of the toxicological symptoms of aconite (which was given in too large a dose by the attendant)—the violent revulsion in both cases, in a most marvellous manner, leading to rapid absorption of the serum which had been effused into the lungs. In the convalescent stages, arsenic and nux vomica proved of much service; and whenever pulmonary effusion took place potass. iodid., alternated with ammonia and nux vomica, was had recourse to, with success in every instance.

I would particularly call attention to the success which attended the administration of ergot of rye and quinine in the Purpura of No. 3 case. I was led to administer these agents from the consideration of two facts: viz., that a zymotic poison was circulating in the blood; and that the nutrition and consequently the resisting power of the walls of the capillaries and arterioles had been thereby interfered with. I should also mention that in this case I attributed (at least to some extent) its relapsing character to the animal having been supplied with impure water.

Sequelæ.—Two cases of *Purpura Hæmorrhagica:* one case I have already referred to; another case occurred in a well-bred five-year-old carriage-horse, ran through the usual course, was

treated with Cupri et Ferri Sulph. et Pulv. Canth., m. et n. in mash; Potass. Iodid. in water, and Ol. Tereb. by injection in the middle of the day, and made a good recovery. This horse suffered from pleuritic complications during the violence of the febrile attack, and for a few days the purpuric lesions were located in the lungs.

A very remarkable clinical fact was forced upon my attention in connection with this case. After the subsidence of the primary febrile attack I ordered the application of a cantharidine blister to the off fore-leg (the animal being lame from splint), and during the subsequent effusions which accompanied the Purpura, and which in turn involved the other three limbs, the leg remained fine. Pulmonary effusion was the most common result, and has been referred to before. Cough and sore throat were frequent sequelæ, and were sometimes very troublesome to get rid of.

Observations.—I think the whole course of this affection, and its sequelæ, point distinctly to the presence in the blood of an aeriform poison capable of rapid multiplication and extension, and tending to produce repellation between the constituents of the vital fluid, and, as a consequence, separation of its elements, leading to effusions and extravasations; its symptoms, too, I think, warrant the designation of "*Yellow Fever*," which I have given it. The two cases of paralysis were remarkable (although doubtless due to effusion on to the spinal cord), considering that in not one single case were there any brain symptoms shown. The length of time which the icterus remained was also a very marked feature, and was due to structural alteration in the liver, as the result of effusion; or to the deposition of the colouring matter of the bile in the interstitial connective tissue. The cough was no doubt due either to organic changes in the lung tissue, to interference with the tenth nerve, or to submucous effusion, or thickening, of the broncho-laryngeal mucous membrane. Towards the latter part of October this disease again prevailed, but only in a modified degree—*i.e.*, fewer cases, and not so grave in character; but, curiously enough, I had a dog suffering at the same time from Zymotic Hepatitis.

I cannot close my remarks on the subject of Bilious Fever

without directing your attention to a very instructive case which recently occurred in my practice.

A Belgian draught-horse, five years old, in good condition, recently imported, was brought to me on the morning of April 1st, presenting symptoms of a mild attack of Bilious Fever, with sore throat. I noted nothing special in the condition of the animal; and, after ordering the necessary treatment, directed that he should be again brought for my inspection on the morning of the 3rd. These directions were complied with; and on examining my patient I found that the pulse had risen and that the breathing was hurried; I was also informed that his appetite had become indifferent. The symptoms, however, were not very alarming. Treatment was continued; and on visiting my patient the following day I soon discovered that he was much worse—the pulse having risen to 80, the breathing to 24, and the temperature to $104\frac{2}{5}^{\circ}$ F.: appetite in abeyance, mucous membranes not much injected. On auscultation and percussion, I found that the whole of the inferior half of the left lung was impervious—a condition which I attributed to zymotic effusion. I will not weary you with minute details of the progress of this case, but will simply direct your attention to its most salient and important features.

On April 6th diarrhœa set in (no laxative medicine had been administered); and simultaneously with the advent of this intestinal catarrh a number of small abscesses (at first more like pustules) made their appearance on the chin. For the first day I did not attribute much importance to these abscesses, as they had much the character of the pustules and ulcers which we see frequently produced in transit by sea from contusions; but as day succeeded day the abscesses became more numerous and larger, involving the angle of the mouth, the cheeks, and the upper lip; and those which had burst discharged an enormous quantity of laudable, though sanious pus: coincidently with the extension of the abscesses, the lips and lower part of the face became swollen to such an extent as to prevent the animal eating or drinking and to make the administration of medicine a difficult operation.

One peculiarity I noticed in these abscesses—viz., that before

eruption the surface was quite flattened, almost umbilicated, and of a brown hue. As the abscesses rapidly increased in number, and the purging was unabated, I had no hesitation, on the 8th, in expressing an opinion that the animal was suffering from Pyæmia, as the result of breaking up of previously diseased lung tissue, or probably of an abscess; and absorption into the blood of toxic material, or transportation of infective thrombi. Antiseptics, eggs, milk and port wine were freely administered; and as the diarrhœa became more alarming, they were on the 9th combined with astringents; at the same time enemata of starch were thrown into the rectum. I should observe that at this date the discharges had assumed a brownish-red hue, but throughout were not at all fœtid.

On the night of the 9th abdominal pain was evinced, and continued (though not violent) all the following day, requiring the administration of several anodyne doses before relief was afforded. I now expressed a decided opinion that ulceration or suppuration of the large intestine had set in, and that the case was hopeless; nevertheless, I was asked to persevere in my attempts to give relief. The pulse still remained about 80, but the breathing, though slightly more laboured, was not so quick as at the outset. The temperature, however, commenced to lower —the thermometer registering 103° F. The physical lung symptoms on the left side were less alarming than on the 3rd.

April 10th.—All the symptoms aggravated, with the exception of the diarrhœa, which was checked. The respiration was more laboured, and accompanied by a grunt; the mucous membranes pale; the temperature $102\frac{3}{5}^{\circ}$. Multiple abscesses appeared on the left shoulder, the sides of the thorax, and on the inside of the near hock; those on the face had increased in number. Auscultation revealed increased dulness in the left and friction sounds in the right side—these sounds being accompanied by a loud noise, similar to the crying of a child, and by cavernous râles.

April 12th, a.m.—Gave directions that the animal should be shot; some delay occurred in the carrying out of the order, and he died at 3 p.m.

Autopsy revealed extensive inflammation, ecchymosis, and

thickening of the coats of the cæcum, with two large, irregular, greyish patches, externally; showing that in a short time, had the patient lived, perforation would have taken place. In the interior of the bowel I discovered a cluster of irregularly rounded, softened, greyish elevations (a little smaller than threepenny-pieces), and intermixed with these a number of clean-cut ulcers—which did not, however, extend past the mucous membrane. In other parts of the intestines several hyperæmic circles existed.

Towards the apex of the intestine several patches, as large as the palm of the hand, of mortifying and disintegrating intestine existed, corresponding to the large grey patches on the exterior, and separated from the surrounding mucous membrane by a distinct chasm of segregation. The dead portions of the intestine were softened, thickened, and grey in colour, except on the surface, which was dyed (by the contents of the gut) of a brownish hue. At the extremity of the apex the ulceration had extended by contiguity to both sides of the intestine.

The kidneys were large, pale, and soft. On carefully opening the thorax I was astonished to find a very large quantity of reddish-brown serum, the surface of which was covered with foam; the serum in the left chest contained a large number of yellowish-brown flakes of partially degenerated lymph—evidently the product of the breaking up of an old abscess. The lower part of the left lung was intimately adherent to the costal and phrenic pleuræ, and a cavity existed in its interior which communicated with a bronchial tube—thus accounting for the presence of foam on the surface of the serum, and also for the absence of fœtor in the breath, which I had particularly remarked throughout the attack. I am of opinion that the walls of the abscess communicating with the pleural cavity had given way between the time I saw the horse in the morning and his death in the afternoon, as I detected nothing on examination to lead me to the conclusion that such a lesion existed; neither did the respiration indicate hydrothorax — the peculiar boat-like action of the flanks so characteristic of this condition being absent.

Suppurative peritonitis was extensive; the peritoneal cavity containing a tolerably large quantity of unhealthy pus.

As to the character of the enteric disease, I am of opinion

that it is in some respects allied to human Typhoid, and that it originated *autogenetically* (*i.e.* by auto-inoculation), as the result of the rapid breaking up of a previously diseased portion of lung with absorption therefrom of infective matter into the blood—the glands of the cæcum becoming vicariously sacrificed in their attempts to excrete the poison. Had the animal lived a sufficient length of time, sloughing and perforation would have inevitably resulted. The course of this case and the occurrence of the secondary enteric lesions teach us to be careful how we express an opinion as to the cause of ulceration of the coats of the intestines, as we may be the cause of much injustice and trouble, not only to brother practitioners, but also to grooms and carters, by attributing such lesions as I have described to the empirical administration of corrosive agents.

I may observe that a few weeks ago I was asked by Mr. Rutherford, V.S., of Edinburgh, to look at a Belgian horse which presented symptoms allied to those seen in this case, with the exception of the labial eruptions being purely pustular and superficial, and the breath being extremely fœtid. Mr. Rutherford has since informed me that on *post-mortem* examination he found extensive Colic ulceration. Mr. Tom Taylor, of Manchester, also told me, some nine months ago, that he had a number of cases of a similar character; but as I had no opportunity of examining the *post-mortem* lesions in either case, I cannot pretend to pronounce an opinion as to their identity.

PERI- AND ENDO-CARDITIS, WITH VALVULAR VEGETATIONS IN THE HEART OF A FOAL.

BY G. WYER, M.R.C.V.S., DONINGTON, LINCOLNSHIRE.

I HAVE forwarded to-day (Nov. 18th, 1876), per rail, to "The Brown Institution," the heart of a foal about five months old. The history of the case is as follows:—About eight weeks ago, Mr. ——, a few miles distant, sought my advice respecting this animal, which was in a field. It, with two others, was at once ordered to be got into the yard; after some trouble, and

much exertion on the part of the foal, the latter fell to the ground, and all its attempts to get up again were futile. The owner suggested that it should be destroyed, but to this I could not then assent. On examination, I found all the limbs much swollen, the pulse very quick, the breathing laboured, a slight defluxion from both nostrils, trifling cough; the visible mucous membranes were in no way changed, except in the presence of several minute hæmorrhagic spots observed on the conjunctivæ and nasal and vaginal membrane. From these appearances I pronounced the case to be a serious attack of Purpura Hæmorrhagica, and at once had it placed in a loose box. It was then submitted to a tonic treatment—consisting in the administration of ammonia, gentian, ginger and ale three times a-day, with a little Ol. Tereb. occasionally. Thirty-minim doses of sulphuric acid were poured into water for the foal to drink three times a day. A liberal diet was ordered, and attention to the general comfort of the creature. Under this treatment, in about three weeks restoration to health was effected. Having frequently to attend in the yard, I occasionally looked at my late patient, and observed that it had gained flesh rapidly. Ten days ago, however, my attention was again directed to it, as it looked much emaciated and had great pain in both hocks. I told my client that I this time had no hopes whatever of a favourable result; but it was, nevertheless, placed under the tonic treatment—gentian, ginger, ferri sulph. and potass. bicarb. It died in a few days.

The autopsy proved the abdominal viscera to be healthy; but on opening the thorax I was struck by the space the heart occupied, and on further examination I found its sac distended with a straw-coloured fluid—perhaps to the extent of two quarts. The heart itself exhibited very much the same colour; it was larger than usual, and in an anæmic condition. The valvular disease and vascular tumour found therein needs no comment from me, and I leave that matter entirely in your hands. The lungs were quite healthy.

Thinking this an uncommon case, I have much pleasure in submitting the heart for your examination, and any remarks you may think necessary to make I shall be glad to receive.

[The heart is an excellent, and we fancy almost unique, specimen of peri- and endo-carditis—but more especially the latter. The right cavities are chiefly, if not solely affected, the most marked features being semi-organised masses of fibrin in different parts, though more particularly on the tricuspid valve in the auriculo-ventricular opening, one of the segments of which shows a mass as large as a big walnut; the other segments also exhibit similar deposits, and smaller ones adhere to some of the *chordæ tendinæ*. The sigmoid valves of the pulmonary artery are likewise studded with these vegetations. The venous regurgitation must have been very extraordinary in this case, and death was doubtless due to the disturbance produced in the pulmonary and venous circulation.—ED. *V. J.*]

SOME NOTES OF A POULTRY EPIZOÖTY.

BY W. ROBERTSON, M.R.C.V.S., KELSO.

DISEASES of poultry have not, as a rule, largely engaged the attention of either veterinarians or comparative pathologists. Occasionally, however, whether from the extent of the distribution of such diseases, their epizoötic character, or the analogies or relations which they bear to similar conditions in other animals or in man, their study is fraught with more than ordinary interest, and may be productive of valuable practical results.

Acting upon this belief—the probability of interest, and the possibility of practical benefit—I submit the accompanying narrative of facts; abstaining in the meantime from attempting to draw therefrom any conclusion, or to advance any theory or hypothesis regarding the special etiology or pathology of this diseased condition.

During the year 1876, over a large district of the border counties, the ordinary or gallinaceous poultry have, on several separate farms, suffered much from a specific and distinctly marked diseased condition, which, from its individuality, extent, and fatality, has attracted more than ordinary attention. The present is certainly not the first time that this disease has forced

itself upon the attention of those interested in these matters; it has, at varying intervals and at isolated places, for many years been observed among our ordinary farmyard poultry. This disease, whenever and wherever appearing, has been characterised by features of unvarying similarity: insidious in its origin, steadily progressive in its course, and fatal in its results.

Regarding the nature of the disease, there may be room for difference of opinion. Greater, however, than the difficulty of securing unanimity of opinion on this point, is that of satisfactorily determining the exact nature of the causes which operate in its production. Breed does not seem to have much or any influence in its production—fowls of any pure breed, as well as crosses and nondescript varieties, being alike sufferers. Although it is extremely probable that the main causes in its production are dietetic or enthetic, still the exact nature of these agencies, or the manner of their introduction into the animal body, and their mode of operation, do not appear as yet satisfactorily determined.

Fowls fed chiefly or largely on raw grains, have suffered not less severely than such as have received liberal supplies of cooked food.

Age seems to have some connection with its origin, and with the development of obvious symptoms. Rarely are the birds of the first year, to even a critical observer, detected as in any manner suffering from ill-health; although when killed from flocks where the disease has fairly established itself, even they give unequivocal evidence of infection. It is chiefly among birds of the second year, or older, that this disease claims its largest proportion of victims. That defective sanitary conditions are not largely concerned as factors in the production or development of this condition, would appear tolerably certain, seeing that the most serious outbreaks have been in cases where attention to space, cleanliness, ventilation, temperature, light, and other conditions favourable to robust animal life have been most largely and faithfully carried out. The time occupied in the progress of this disease, from the period of its visible manifestation to its fatal termination, varies from three weeks to as many months: the average may be set down at six weeks. Although not attracting attention at the time, to the extent of arousing

suspicions of serious results, it has always occurred to the recollection of the owners, when the disease has been fully established, that prior to the first visible or attractive manifestation of ill-health there had been a marked decline in the quantity of eggs obtained, and this without any appreciable cause. Although, in a general sense, it may be said of this disease that its progress is characterised by a gradually increasing marasmus, there are, nevertheless, instances tolerably numerous to be met with, where the fowls have died without great outward manifestations of disease, and continuing to the last fairly well fleshed.

The general train of symptoms are, first of all, a capricious appetite, a disposition to mope by themselves and appear careless of their plumage. Very shortly an irritable diarrhœa sets in, the fæcal matter being of a yellowish tinge; the eye loses its brightness, and the wattles and comb their colour. As the disease advances the nervous system seems affected; the birds lose control over their movements, or they are lame,—mostly of one limb, more rarely of both, and have a stupid semi-conscious appearance. Food in many cases will be partaken of, even when the disease is advanced, if placed before them; although they will not seek it, either from inability to move or from impairment or loss of special sensation.

The structural alterations discoverable in all autopsies have been confined to the abdomen and organs contained in that cavity—notably the spleen and liver. When this latter organ has been much diseased, there has always been found a considerable quantity of fluid in the cavity. The bowel, but chiefly the cœcal tubes and colon, together with the mesentery, carry the specific and characteristic material of the disease. This adventitious or new-formed material is in the liver and spleen deposited, or collected in circumscribed masses or nodules, varying in size from a mere speck to collections as large as a pea, or even larger, and of a grey or yellowish-white colour, firm to the touch, and apparently granular in character. This material, so like miliary tubercle, is laid down amongst the component structural elements of the organ, with which it does not appear to intimately unite or mingle, simply pushing them aside. In

the liver it is distributed through the entire organ, studding the surface, but beneath its capsule, giving it a bright speckled appearance: these spots or nodules being, as already noticed, of variable size, but always clear and isolated. When the organ is cut or divided, these nodules project from and mottle the cut surface. In the spleen it seems oftener to occupy the centre of the organ; and sometimes the several masses are so numerous, and laid so closely together, that the entire splenic structure is merely a thin film spread over this new material, enclosing it as the shell does the kernel of a nut. On the intestine and mesentery the adventitious deposit or growth is met with in isolated patches. These patches are very marked on the external surface of the gut, and considerably elevated from the general surface of the tube. In some cases these nodules, particularly the larger, have been observed to communicate with the interior or lining surface of the tube. When most distinct, this communication appears to be the result of the direct removal of the mucous membrane of the tube; while from beneath this membrane tubercular-like material projects into the communicating tract or the bowel itself, and is always of a nodular and irregular character. The entrance of the cæcal tubes into the large intestine seems a favourite spot for the occurrence of this formation. Here, although these tubes are much increased in outward bulk from the presence of this growth, they are nevertheless of greatly diminished calibre, from the same cause. When increasing in extent, this new formation is more disposed to envelop the tube, progressing transversely, than to extend in the direction of the course of the canal. Examined with the microscope, this new material exhibits appearances very much akin to those of miliary tubercle: consisting of amorphous matter in small spheroidal masses, either applied one against another, or separated by fine lines of a homogeneous, transparent-looking material, forming in some instances an imperfect network, within which the spheroidal elements are grouped. This condition can hardly be said, however, to be perfectly uniform; as in many examinations there were distinctly observed, in addition to these spheroidal or lymph-like elements, larger and very irregularly-shaped masses of protoplasmic matter, containing many nuclei, each nucleus

enclosing a nucleolus. These nucleated masses possessed branched processes, which, as in true miliary tubercle, appeared to be continuous with the partitions or reticulum of the nodule. In some instances the small nodules were found of a firmer consistence, and more distinctly fibrous, probably cartilaginous, having in mass a gritty feeling. Having an idea (probably from reading a communication of M. Colin, published in the *Récueil de Médecine Vétérinaire* for July, 1862, of a somewhat similar condition of the liver of a rat) that these nodules or new formations might be verminous, they were examined with a view to ascertain the correctness of this supposition; but no affirmative indication could be obtained. Occasionally some of the larger masses found on the intestine or in the spleen might show softening or fatty degeneration; this, when occurring in the former situation, generally found means of discharge through a canal formed between the nodule and the interior of the bowel.*

* The diseases of poultry, from the greatly enhanced value and ever-increasing number and higher quality of this kind of "stock," are well worth the attention of the veterinary profession. It is evident that these maladies are on the increase, and probably new ones are being developed during the process of perfecting which many of the varieties of poultry are undergoing. It can scarcely be doubted that some of them are infectious, and there is consequently all the more need for careful investigation. Evidence in this respect is abundant; and the latest appears in the *Live Stock Journal* for December 22, 1876, where, under the heading of "The New Disease," a correspondent writes:—

"From what I hear through friends and others, this singular disease that appears to be following the wake of poultry shows this season, is assuming serious proportions. One of my neighbours has lost several birds since the Palace Show, and now I hear the late Canterbury Show is claiming its victims. I have also received letters from fanciers, in which they state their birds are dying in an unaccountable manner—the disease commencing in those which have lately returned from exhibition, and rapidly spreading through the yards. If this state of things continues, exhibitors will be chary of sending to shows. On speaking to a friend upon the subject, he suggested that the pens should be disinfected after each show. This struck me as a valuable suggestion, and I make bold to publish the hint."

In the body of this journal we have given a translation of the history of a poultry epizooty in Bologna, Italy; in "Veterinary Sanitary Science and Police" (vol. ii.) will be found a section devoted to "Fowl Cholera."—Ed. *V. J.*

ENCYSTED BULLET IN A DOG'S FOOT.

BY T. D. BROAD, M.R.C.V.S., BATH.

ON Nov. 23rd, 1876, a large spaniel dog, the property of a gentleman, was sent from a distance for my opinion respecting a lameness in the off fore-leg, which had existed since April last, when he was carefully examined by a surgeon, and since that time by a veterinary surgeon's assistant, but without the cause being detected. On examination I found, in front of the foot-joint, what appeared to be an ossific deposit, slightly movable. On cutting down upon this, I discovered that it was an encysted conical bullet from a pea-rifle, which on examination showed that it had struck some hard body and glanced off before piercing the skin of the dog. It must have entered, I think, at the upper part of the radius, and worked its way downwards. A few days after the operation the dog was quite free from lameness. Such cases are not common in civil practice.

AMENORRHŒA, FROM IMPERVIOUS VAGINA IN THE BOVINE FEMALE (?)

BY J. GERRARD, M.R.C.V.S., MARKET DEEPING, LINCOLNSHIRE.

THE communication on the above subject by Mr. Macgillivray, in the December number of the *Veterinary Journal*, is worthy of notice, not only for the extreme rarity of such a condition in our patients, but for the deduction he draws from it and the doctrine he endeavours to inculcate.

Properly designated, according to Mr. Macgillivray's ideas, it should be that of "Amenorrhœa," from obliteration or closure of the vaginal canal, or suppression of the catamenial discharge.

This condition is sufficiently frequent in the human female, in whom the function of menstruation is an undisputed phenomenon; but it has never been observed before in any of the domestic animals, so far as I am aware—at least, it has never been recognised or acknowledged as such. Hence the importance of Mr.

Macgillivray's communication, if his deductions are founded upon proper premises.

The existence of a periodical sanguineous discharge in the lower animals, analogous in every respect to that in the human female, is not established. That a certain analogy exists between the menstrual epochs of the human female and the periods of œstrum in the lower animals, no one, I believe, will try to dispute. Their general resemblance is too evident to require demonstration, but the difference in degree, and even in kind, is so marked as to destroy their identity.

Hundreds of domestic female animals show no trace of discharges of any kind at their œstral periods, and in those in which it is observed it is nothing more than a mucous exudation sometimes tinged with blood. A sanguineous discharge, to the extent and with the regularity of the human female, is never observed. Had such a periodic discharge been a normal condition of our female domesticated animals, there would have been no room for doubt about it by this time; but, indeed, all experience confirms the contrary.

Fleming, in his "Veterinary Obstetrics" (probably the most learned and elaborate work on the subject in any language), strives hard to establish the analogy, by quoting foreign authors who say they have observed it; but the proof is rather far-fetched, and is not very obvious when the microscope is required to distinguish blood-corpuscles in the red-coloured mucus of the vagina and uterus.

A discharge so profuse as that which Mr. Macgillivray describes in his case,—a two-year-old heifer, which the owner or attendant said had never been put to the male,—points to a rather different cause as its origin than that of suppressed catamenia from occlusion of the vagina. It would be extremely interesting to know what could have caused such a stricture of the passage, in such a subject.

Such occlusions do occur in the human female, as a result of difficult parturition, and are usually due to inflammation excited during the process by the long-continued pressure of the fœtus on the maternal soft parts, and which ends in sloughing and adhesion of opposing raw surfaces. And even in the cow and

mare, when excessive force has been applied too soon in bringing away a calf or foal, laceration of the passage has resulted ; and this has recovered, but in a contracted condition, so as to render them useless for breeding purposes for ever after. But I have never heard or read of anything like a complete occlusion as a result of injury, or even congenital malformation in the shape of imperforate hymen, either in the equine or bovine species, inducing such a condition as Mr. Macgillivray describes. If it had been occlusion from inflammatory action arising from any injury whatsoever, it would have scarcely been accomplished without some one being cognisant of it ; unless, running in the open fields —as they often do in the Banff district—some male had interfered with her, which is very probable, notwithstanding the owner or attendant's answer in the negative. And if it had been so, the cicatricial tissue would not have resisted such force as Mr. Macgillivray says he had to use to reach the os ; and if it had been a congenital malformation, as he says he thinks it was, I do not think he could have forced the passage so easily and so well as he did, and found the os and uterus in the condition he says they were.

It was extremely unfortunate he did not see the parts after death ; for it is evidently a rare case, and would have made a unique specimen.

Whatever may have been the cause of the occlusion, whether congenital or induced, the nature and amount of the fluid, as stated by Mr. Macgillivray, are inconsistent with its being the "œstral products" of a two-year-old heifer. In the first place, the "*immense*" quantity is against the deduction that it was "*œstral products.*" Even if we admit that this is a fixed quantity, and invariable in occurrence—which we do not—the quantity in this case would be far greater than could accumulate from this source, even although the animal had reached the state of puberty at twelve months, and had been in "heat" regularly every three weeks, which is about the ordinary time of recurrence in the bovine female.

Secondly, the nature of the discharge, "*sero-sanguineous,*" is inconsistent with its being "*œstral products*" analogous to that of the human female. The fluid in these cases is very viscid and

glutinous, dark and tarry, and does not flow out except through an opening of considerable size. Nor is a "*sero-sanguineous*" fluid the healthy product of a mucous membrane. In what is known as "Dropsy of the uterus," the fluid is of a *sero-* or *muco-purulent* kind—never sero-sanguineous. A number of cases of this nature are reported in the *Veterinarian* for 1873, and commented on by Mr. Cartwright, Whitchurch, Salop, than whom few professional men have had larger experience in this kind of practice. In none of the cases referred to is the discharge given as of a sanguineous nature; and they are all supposed to have been caused by imperforate hymen, if ever such a condition exists in the female domestic animals.

I am inclined to think with Mr. Cartwright, who endorses the view of Mr. Relph, of Sebergham, that it is the result of mechanical injury sustained in copulation. Further, I believe these cases are more of the nature of *Hæmatoma* than suppressed catamenia, or Dropsy of the uterus either.

The "*sero-sanguineous fluid*" described by Mr. Macgillivray unmistakably proves this; and the few cases I have seen of a similar kind, as to symptoms, subjects, and appearances, confirm me in the belief that his was of this nature. All the cases that have come under my notice have been in heifers after being put to the bull about a fortnight or so—with the exception of one in a mare after foaling; and I think it extremely probable this may have been the cause in Mr. Macgillivray's case, although neither the owner nor attendant were aware of the fact.

This pathological condition, which may occur in pregnant as well as non-pregnant animals, has not been treated of by any lecturer, or noticed in any text-book of veterinary science with which I am acquainted; nor is there much notice of it in the whole wide range of modern English obstetric literature until the time of Simpson, who, I believe, was the first to recognise and distinguish it from pelvic Cellulitis, the tumour of which always contains pus.

As described by him, "it consists essentially of rupture of some of the veins or arteries that supply the ovary, and pass to it between the layers of the broad ligament. The blood escaping from the ruptured and sometimes varicose vessel, infiltrates into

the cellular tissue of the broad ligament and those neighbouring parts of the pelvic cellular tissue which communicate freely with it—forming there a swelling or tumour composed of this effused and incarcerated blood."

I recorded a case of this nature, occurring in a mare after foaling, in the *Veterinarian* for 1874. I shall not further intrude on your space with details, than to say that I think this theory affords a more plausible and probable explanation of such cases as the one recorded by Mr. Macgillivray, than the assumption of a cause that almost every one knows does not exist, or exists in such proportions as would make the condition described an impossibility.

My object will be gained in drawing the attention of practitioners having such cases, to the subject, trusting that some one may be induced to record the results of their cogitations and experience thereon.

CASE OF IMPERVIOUS VAGINA IN A HEIFER.

BY RICHARD WEST, M.R.C.V.S., REDHILL.

IT is stated in Mr. Fleming's "Text Book of Veterinary Obstetrics," that the existence of a menstrual discharge in the lower animals is frequently denied; but I think the case recorded by Mr. Macgillivray in the *Veterinary Journal* for December last, together with the following somewhat similar case, must go far to convince the most sceptical that something analogous does exist in the bovine species.

On August 9th I was requested by Mr. Harker, of Nutfield Marsh, to see a heifer that was unable to calve. I found her straining violently, and evidently in labour. I proceeded to examine her *per vaginam*, and was surprised to find I could only insert my fingers about three inches, when the vaginal canal appeared to end abruptly. I examined the parts very carefully. The vagina appeared to be quite impervious, and I could not discover the slightest trace of a passage to the uterus.

On inquiry, I was informed that the heifer was one of a lot that had been turned out in the spring with a bull, and the owner thought she was in calf; so I came to the conclusion that the fœtus was dead, and abortion was prevented by the state of the vagina. Not thinking it advisable to incise the parts, I recommended the animal to be kept quiet, believing the pains would gradually subside. I saw her occasionally; the pains continued at intervals, and she gradually lost flesh.

At the beginning of December I saw Mr. Macgillivray's case in the *Veterinary Journal,* and thinking it was like this one, I decided to cut through the obstruction. So on December 2nd I again visited the animal, and made an incision into the obstacle, which appeared to be very tough muscular fibre, and with great difficulty I partly incised and partly tore a passage to the os uteri. This I found to be quite closed, and with much patience I managed to insert a whalebone sound and dilate the os a little. When this was accomplished, a large quantity of reddish-brown fluid, smelling very offensively, was ejected, and the owner still thought there was a dead calf in the uterus. I therefore proceeded to dilate the os with the dilating bags, and succeeded in inserting and distending the two smallest, but could not distend the third one. On exploring, to discover the cause of this resistance, I found what appeared to be a tendinous band across the superior part of the os, which I was unable to stretch in the least, although I used considerable force in the attempt; but I easily divided it with a slight touch of my knife. The os at once dilated, and I found the uterus about three times its normal size, having a rough, harsh feel; but I could not detect the slightest trace of its having ever contained a fœtus.

The heifer continued to eject small quantities of the fœtid matter, so I syringed out the uterus with a solution of Condy's fluid in tepid water. She continued to strain violently—so much so as to force out a portion of the rectum; and I feared inversion of the uterus would take place, so I gave her some Tinct. Opii, and put on a truss. The straining continued for two days, but she afterwards appeared to be quite well.

I should think at least two quarts of the fluid escaped from the uterus; and this I am of opinion should have come away as

a periodic discharge, but was prevented by the impervious state of the vagina, which must also have rendered impregnation impossible.

IRREGULAR STRANGLES AND RUPTURE OF THE STOMACH.

BY JAMES LAMBERT, M.R.C.V.S., 17TH LANCERS, ALDERSHOT.

A HANDSOME brown mare, three years old, No. 44 of H Troop, 17th Lancers, was first admitted to the infirmary stables, Island Bridge Barracks, Dublin, on the 30th July, 1875, for Catarrh. There was cough, sore throat, and muco-purulent nasal discharge. She was treated by the application of stimulating liniment to the throat, and mash diet. On the 3rd August, the respiration and pulse being accelerated, mustard was applied to the throat and breast. Next day she was much better, and was discharged cured on the 24th August, having had rest up to that time in a loose box. On the 3rd September following, she was again admitted for Catarrhal Fever: pulse 54, respiration 16, cough and sore throat. Ammoniacal liniment was applied to the throat. In the evening she lay down and rolled, looking round at her sides; and was evidently suffering from abdominal pain, though not of a severe character. Pulse 70. Received in drench, Spts. Æth. Nit. ℥ij., Opii Tinc. ℥ij., Aqua Oi.; and an enema was administered. In three hours, being still a little uneasy, the draught and enema were repeated, and she soon appeared free from pain.

The mare gradually improved up to the 11th September, but the pulse continued between 50 and 60. However, the animal fed well, and the respirations were only eleven per minute. Green forage was given in addition to the usual food, and she was kept in a good, well-ventilated, comfortable box. On the 17th September she lay down in pain. Enemata gave relief, and she passed some soft fæces. Next day there was cough, but no pain. On the 19th September she was in abdominal pain. Stimulants and antispasmodics were given, and hot-water cloths

applied to the abdomen and chest. Enemata were administered. She became easy.

Nearly every day she had colicky pains, for which Ol. Lini. and antispasmodics were given. She was often found lying down, stretched out, as if suffering dull but not violent pain; and I remarked that the straw lay in a circular direction in the box, as if she often walked round it. I suspected that she was suffering from mesenteric disease.

On the 1st October, at 2 a.m., the sentry on guard near the box heard the mare to be uneasy, and he called Farrier-Major Johnson, who administered a colic draught and enema. In twenty minutes, as she was no better, I was called up, and found her in great pain, but the pulse was only 44. When standing, she assumed the attitude of shrinking from the right side, bearing all the weight on the near fore and near hind legs. When moving, she turned to the right. The Farrier-Major had observed an eructating noise in the throat. I ordered Ol. Lini. Oi. and Opii Tinc. ℥ij., and enema. As she obtained no relief, ammoniacal liniment was applied to the abdomen, followed by hot-water cloths. About half-past six the eructating noise was heard in the throat every few minutes—about every ten. It was like the noise made by water being forcibly projected up a long tin pipe. On observing the left side of the neck, it was found that, coincident with the noise, the œsophagus was dilated by fluid propelled from the stomach, which was stopped by the *velum palati*, and again descended: in fact, the mare was vomiting, although *nothing* escaped by the mouth or nostrils. After a time the noise and dilatation of the œsophagus occurred about every three minutes; *but no fluid escaped, although it could be distinctly observed ascending and descending the œsophagus.* Pulse 60, and full, and from the time I was called there had been extreme agony. Prognosis: Rupture of the stomach.

At half-past seven she began to strain most violently—so much so as to project urine two yards from the vulva while she was lying down. The straining was fearful. At a quarter-past eight a.m. she stood up, trembled violently for about two minutes, then fell, and, after a slight struggle, died.

At half-past eleven o'clock, the same morning, the *post-mortem*

examination was made. The stomach was ruptured in the villous portion for about nine inches, and the food was plastered outside it and the omentum, and between the intestines. The villous coat was much injected. Between the layers of the mesentery of the duodenum and jejunum were three enormous abscesses, full of what may be termed characteristic Strangles pus, quite four quarts, of a whitish-green colour and creamy consistency. The walls of these abscesses were mostly an inch, or an inch and a half to two inches in thickness; so that the whole, when opened and lying on the ground, was as large as a good-sized chair cushion.

The cause of the frequently recurring colicky pains was thus disclosed, for the tumour pressed on the intestines and interfered with their action. The rupture of the stomach was probably caused by its being compressed between the tumour and the diaphragm. I am of opinion that the abscesses were the result of Irregular Strangles.

The food in the intestines was throughout well digested. The thoracic contents and the other internal organs were healthy.

It may be again observed that none of the contents of the stomach, forced up the œsophagus, at any time escaped by the mouth or nose.

VETERINARY OBSTETRICY.

BY W. A. COX, M.R.C.V.S., ARDWICK, MANCHESTER.

Twists of the Cervix Uteri—double, single, and spiral.—Double twist is more common in cattle; in all animals delivery is impossible. Particulars of cases of this kind are mentioned in the November issue of your journal. *Single twist* is not very unfrequent in cattle and sheep—scarcely, if ever, seen in other animals; in the former delivery can be effected by drawing the head and extremities, previously corded, through into the passage, guarding the protuberances with the hand, so that they do not catch the shelves of membrane: the pressure of the fœtus frequently

uncoils the twist. In sheep the difficulty is greater, owing to the smaller size of the animal. *Spiral twist* is from before backwards, several folds of membrane passing in a worm-like manner in the direction mentioned; the hand may be passed easily through the cervix except when the animal "pains" herself. When the orifice, instead of dilating, contracts and retards rather than assists delivery, in some cases the pressure is so great as to temporarily remove all sense of feeling. The os uteri and entire cervix should be anointed with the following: Ext. Belladonna, ℥ij.; *lard*, pure, ℥ij.; well rubbed down; if this does not prevent the inordinate contraction, chloroform should be given, by inhalation, when it will be found that delivery may be effected; but it is necessary to employ considerable traction.

Adhesion of the vaginal walls and apparent obliteration of the passage is occasionally found. This is puzzling to a young practitioner,—a wall of flat membrane without orifice presenting itself. Careful examination will show that the lateral mucous surfaces of the vagina have become attached, probably from some irritation at the period of copulation, or as the sequel of an attack of Gonorrhea. In all cases of this kind that I have met with, persistent pressure of the knuckles—the fingers and thumb being tightly closed—has sufficed to separate the adhesion.

Vaginal tumours are sometimes seen; they are frequently cysts filled with serum; but before puncturing them their nature should be correctly diagnosed, or it may be found that they are aneurismal or varicose. In some instances a ligature has been passed around them. It is seldom that they interfere to any great extent with delivery.

Prolapsus Cysti is more frequent in the mare than in any other animal: I have known instances where it has been ignorantly punctured, from an idea that it was a fœtal membrane. Its nature may be diagnosed by tracing it to the meatus. It is easily reduced by pressure at the fundus; and the animal must be placed in a narrow stall, the hind-quarters being raised from one to two feet. A dose of alterative and sedative medicine should be given; a plug or two dipped in cold water placed

over the meatus and kept by hand for some short time in its situation.

Deposits of bone the result of injury.—In mountainous districts these are not uncommon, and are the result of fractured pelvis, from falls. In some the callus is so large as to block up the passage. No assistance is available.

Constriction of the vulva is found in young animals at the first labour, or is the result of peculiar conformation. The repeated application of hot-water cloths, followed by the ointment previously mentioned, will cause it to expand. Sooner than injure the dam by a forcible removal of the fœtus, the fore-extremities and viscera should be removed, and its outer surface well lubricated with lard before the employment of force. In bitches warded by dogs of a larger size, considerable difficulty is encountered in removing the pups. Dilatation of the structures may be assisted by the repeated use of the hot bath, as before suggested.

Certain conditions of the Fœtus or its membranes, that even when it is straight retard its delivery.

Emphysematous, "wind-blown" or "puffed" fœtus, is a condition due to the death of the fœtus and decomposition of its tissues; this condition originating primarily from a peculiar condition of the dam. These cases are known by their increased size, often to an enormous extent,—in one instance attaining such a size as to rupture the entire length of the uterus.

The dryness of the skin and the bulk will often, even if the fœtus be straight, prevent its expulsion or easy removal: as assist-

FIG. 1.

ance, the entire surface should be lubricated with a fatty agent; and for this purpose hog's lard, without salt, is the best. It may be necessary to remove the fore-extremities, employing a knife (Fig. 1), fitting with a ring on the forefinger of either hand, or

any finger suited to the operator; at the lower and palmar surface of the instrument is a small hole for the introduction of string—this being carried loosely down the palm to the wrist over the back of the hand, and tied so as to allow plenty of wrist play. This will prevent the knife being drawn off. When introducing it, the end of the thumb is placed against the point of the knife, and it is passed along the vagina close to the fore-extremity, and up to the superior part of the scapula above the spinous ridge; the thumb is then removed, the point inserted into the skin, and drawn down to the fetlock. The skin is then detached with the points of the fingers and thumb, taking especial care that the elbow-joint and well up on the scapula are quite free from attachment; or disarticulation may take place at the first or second joints, and the portion remaining may very much impede delivery. The skin must *not* be excised from around the fetlock until the entire limb is skinned. This being done, a slip noose is passed over the fetlock and the limb drawn out. The skin is then pierced, and a cord tied through and around it. It is often necessary to cord the head, passing the noose over, past the ears; the knot should be under the throat, but must be drawn tight by an assistant whilst the hand of the operator is pressed on and closing it, or it will be drawn off; occasionally the poll will "cudge" or lie back unless a small hook be inserted in the orbit.

The knife mentioned is available for many purposes, being easier of manipulation and safer than any used. In the cases just mentioned, if required, it may be employed to open the chest, an incision being made at the most prominent part.

Hydrocephalus, or Water on the Brain, is occasionally found, sometimes being of large size, the abnormal prominence equalling the head in bulk. The best method is to incise the skin with the thimble knife and evacuate the sac.

Ascitis, or Dropsy of the Belly, is rare. It is extremely difficult to pass an instrument down the throat, as suggested by Prof. Simonds in his "Essay on Obstetricy." To do this the point must be extremely sharp, and sufficient control could not be maintained over it during its passage. If carried in a right direction, it will be found that the pressure from without, from

the uterine contractions, and the obliteration of the passage by the movement of the fœtal viscera, will prevent the fluid following the withdrawal of the instrument. A better plan will be to open the abdomen from without, trusting to the contractions of the uterus to expel the fluid that is emptied into it.

There is a condition of the fœtus that is improperly termed *Hydrops uteri*, instead of true Dropsy of the uterus: it is *an excess of fluid* in the *allantoid membrane*, and is sometimes of such volume, and distends the abdomen to such an extent, that it prevents the animal passing through an ordinary-sized door-place; and in several instances I have known it (the abdomen) reach almost to the ground. This accumulation of fluid seriously interferes with the general health; "pains" of parturition are seldom exhibited, owing to the great distension. Examination will probably show the os uteri partially open, and the fœtal membranes, commonly called the "water" or "calf bladder," pressed against it—but of such size as to prevent its passage through the vagina. In this case the membranes must be ruptured. After the escape of the fluid it is often difficult, owing to the previous distension of the uterus, to touch the fœtus. When this is the case, the abdomen should be drawn up toward the spine by a piece of sacking, when it can more easily be reached. It is seldom that there is any difficulty in delivery, owing to the small size of the fœtus.

After delivery the abdomen should be supported by sacking drawn round the body and laced over the back, tightening as required; stimulants should be administered. If the animal is ill from the pressure, and the os uteri is not dilated, a long canula having a stiletto should be introduced in the palm of the hand and passed alongside the finger through the opening, and the contents evacuated. This will produce abortion, but is the only chance of saving the life of the animal.

Schirrhus Chorion.—This condition is occasionally found. The membrane is felt to be free from the uterus—enveloping the fœtus, as it were, in a leather bag, nothing of its form being detectable. The outside membrane must be incised, and the fœtus placed in a natural position and delivered. Parturient pains are seldom violent, nor can the fœtal membranes be forced

into the vagina. This is another instance where an early examination is demanded.

Illustrative of this is a case of a cow belonging to Mr. Smith, of Birdsgrove. Her proper period was past, but without exhibiting "pains,"—although she had been "off at the hips," and the udder filled. The subsidence of these symptoms without any appearance of the fœtus led to my services being solicited.

Examination proved the fœtus to be rolled up in a leathery membrane, detached, and like a huge ball. This was opened, the head and feet corded, and with the employment of a great amount of traction it was extracted. There was no interference with the health of the animal.

(*To be continued.*)

VETERINARY EDUCATION.

BY A VETERINARY STUDENT.

THERE is a complaint springing up on all sides of the non-appreciation of the veterinary profession by the public; and the question upon which this complaint is based is one seriously troubling the mind of every veterinarian who has the proper professional spirit. It is one which would not long trouble them, were there enough professional pride among them. Something is due to public bigotry and prejudice, but more to veterinary ignorance. The scientific standard of the schools has never been such as to meet or merit much recognition from those of the sister profession. Veterinary medicine, instead of being the foundation on which human medicine should stand, has been a sort of bastard parasite, clinging very loosely to the latter for support. Men and youths have attended the veterinary schools with no higher ambition than to become "horse doctors." To learn enough to make a living has been in general the *acme* of their ambition. This state of things exists at the present time, with very few individual exceptions; and so long as it continues, men may complain, and write pages, or even books, about it, and it will avail but little. The cause for it, first and foremost,

rests with the schools. The object of these has been, and is, to attract students—first to help pay expenses, and secondly to give the proper education; and in all this an unfortunate rivalry exists. Another misfortune is that the schools have never been properly started; while another is that there are too many of them. For the advancement of science, a school should be so funded that the directors and professors need have but little cause to trouble themselves about the number of students necessary to pay the expenses. The union of the best talent of the four schools in England and Scotland in one school, properly funded, would mark the advent of a new departure in English veterinary science. It should be done by direct donation from the wealthy horsemen and stockmen of Britain, and by handsome support from the Government. With such enthusiastic friends of scientific advancement as Mr. Fleming, Colonel Fitzwygram, and others, the task should not be so very difficult.

The educational standard for applicants is in no way high enough to elevate the profession, and it allows the entrance of too inferior men into it. Reading, writing, arithmetic, and grammar only, are simply ridiculous requirements; and any school certificate would be sufficient for these. To read in Latin and Greek with moderate proficiency, and German and French understandingly, should be positively insisted on; but here an allowance should be made in favour of the student, as regards these latter languages: he should be required to read them in medical works, and it should be so advertised. Then young men fitting themselves for the medical schools could so direct their studies as to acquire not only German and French, but likewise some insight into medicine at the same time. The reading in the general literature of these countries is, in this case, of secondary importance, and can be acquired at any time during life. It is well known that the latest additions to medical knowledge are never to be found in text-books, but in reviews and journals; and no man can be a really scientific practitioner who does not diligently study these. And with all honesty we must admit that the French and German veterinary periodicals are not only better than the English, but are much more

numerous. Such periodicals offer the best opportunity for exchanging ideas, for confirming doubtful points, and fixing those which become the facts of advancing science.

There are two classes of men most commonly met with in a profession: the truly scientific, uniting theoretical and practical knowledge; and the mere practitioner. As yet, so far as the English veterinary profession goes, the latter is about all we have had. The value of Latin and Greek to the future advancement of the science cannot be over-estimated. Of late we have committed a great mistake in thinking that a knowledge of English nomenclature was sufficient; and some have gone so far as to say that it is all that is necessary. As scientific knowledge becomes more diffused, it will also become more exact; and the necessity for an international nomenclature will become more and more requisite. So that our professional leaders should see to it that the rising members of the profession are properly fitted to carry on their work. The value of a high degree of general education, such as will fit young men to be ornaments to society, has never been sufficiently emphasized among us. And it is to this that the non-appreciation of the public may in some measure be attributed. Veterinary surgeons could talk "horse," but of general science and knowledge they knew very little.

A truly educated professional man should be also able to give an intelligent opinion on all subjects interesting to mankind. By this means he will win friends and respect, as a member of cultivated society. This requires study and application on the part of the student. Among those subjects most to be recommended, the Evolution Theory, and the writings of Darwin and Huxley, are to be well studied; those having especial relation to the profession are the "State of Animals and Plants under Domestication," by the former, and the "Comparative Anatomy of Vetebrates," by the latter; but their other writings cannot be neglected. Then we have those subjects which are yet to become *vital* in the course of human development—"The Relation of Man to the State," and "The Relation of Woman to the State," "Church and State," "Political Economy," and the general history of the nations of the world. To this end, Stuart

Mill and Herbert Spencer must be studied, and the nations' history can be best read in their religious progress. To this end such works as those of Max Müller, Strauss, Rénan, and others, are to be recommended. When we have acquired this, then, and not till then, shall we be fitted to take our place as members of an enlightened society.

Let us now return to those branches of education bearing directly on our professional course of study. But before doing so, I desire to offer a strong protest against the value, in an educational point of view, put upon the time served in an apprenticeship by the English schools; for it is more hurtful to the scientific advancement of the profession than beneficial. It will certainly be found true by experience that, other things being equal, of two youths who have attained sixteen years of age, both intending to enter the veterinary profession, and at this time in educational requirements and mental power as near as may be alike,—if one enters into an apprenticeship, and the other gives three years to the study of special branches to be alluded to hereafter, and the rudiments of which should never be taught in medical schools—Botany, Chemistry, and Physics, with the languages before alluded to—the latter will be far more an honour to the profession than the former. The first. will always be alluding to what he learned as an apprentice with Mr. *So-and-so,* and will never have a high idea of true science. It seems to be overlooked that Mr. *So-and-so* acquired his knowledge perhaps thirty or forty years ago, and has become rusty and antiquated in many things; he only too often looks on the later improvements as "new-fangled notions"; and our student is too apt to become impregnated with those ideas. I do not infer that Mr. *So-and-so* may not be a good and successful practitioner, but to me his influence is bad. Six months' stay with him after graduating would indeed be valuable, as our student could then intelligently compare the old and the new.

The schools should be full of life; they should be filled with the spirit of the future; and they ought to use the present and the past for that end. All respect is due to things that are old; but in science they should be continually tested by the burning crucible of fresh and advancing knowledge; and not become, as

is too often the case, dead weight, clogging the wheels of science. That no student should be admitted to college before he is nineteen years of age, ought to be self-evident; as, if he is received before that period, it throws him into practice before the reflective powers have been sufficiently developed. The aim of the schools should be entirely scientific professional advancement, and every student should be sent into the world fitted for that end. That the majority will seek practice, and money be their aim, is human; but the duty of the schools is not changed thereby. It may be objected that such a course and such educational requirements would shut the doors of our schools to all but the wealthy, and that poor but able students would have no chance. But it has been suggested that the Government should be a handsome contributor to the school fund; and for this a certain number of such students could be admitted gratis yearly, and educated at the State expense; this they might be made to repay by a certain number of years' service as Army Veterinary Surgeons, which would be a public benefit.

I have alluded to Chemistry, Physics, and Botany, and said their rudiments should not be taught in medical schools. To illustrate my meaning, we will take chemistry; and what is said as regards that can be made to apply with equal force to the others. Chemistry, so far as my experience and acquaintance goes, seems to be a bugbear to medical students, and they might well be rid of it. It is only exceptionally that one meets a practising medical man who really knows anything of it. A few urine tests, and the simplest of analyses, are the most they attain to. Few profess any knowledge, and still fewer manifest any desire to acquire any of this branch of our studies. Yet in all the schools we are required to study chemistry, and in all of them most students give as little time as possible to it. Exceptionally a student displays a special aptitude for it, and acquires a very creditable reputation thereby. The reason for this is obvious. Anatomy, histology, pathology, surgery, etc., are to the student absolutely necessary, as without a knowledge of them he knows he cannot obtain a livelihood; therefore he studies them more or less cheerfully, and as his interest in his profession or worldly success inspire him. Chemistry he looks

upon as an interpolation in the professional curriculum, the utility of which he seldom seeks to know. The reason for this is that chemistry, in nearly all medical schools, is taught in a different manner to medical science. Elementary chemistry is taught, and not strictly medical chemistry. A knowledge of elementary chemistry, botany, and physics, should be required of the applicant for admission to the veterinary schools; and the long and tedious lectures now given, and which carry him through the whole field of chemistry—organic and inorganic—should be abolished. This abolition rests with the school directors. That chemistry is unnecessary, the writer would be the last to affirm. Chemistry is a science apart, which requires special study and application, and does not, in its elementary parts, belong to medical education. Up to the present time our system of education has been wrong. The study of the elementary sciences should be begun young; and at about sixteen years of age the youth should be so educated as to take up those special studies bearing more directly on his future course in life. This course should be truly scientific, and have special reference to his admission to those institutions which he will then enter. The course in the medical schools should be strictly that part of these sciences belonging specially to medicine. Medical chemistry would now be interesting, and the students would be no laggards. Toxicology should form a very important part of it, and the action of drugs on living animals should be known to every student. I know I come in conflict with the opinions entertained by anti-vivisectors in this matter; but how a better use for stray curs and half-starved cats, rats, and such nuisances, can be had is hard to discover. Students should make practical analyses of the stomachs of such animals, and write out these analyses, describing the action of the drug as a medicine and as a poison—the toxic phenomena and the pathological alterations in the tissues. The best of these reports in each case should be read by the professor to the class, to which he would add the necessary remarks and comments. The chemical properties of all kinds of food should be perfectly understood, as well as the testing and analysis of all the fluids of the body. Botany, when taught in the same way, becomes very nearly

allied to chemistry. The study of physics at the medical school should be only applicable to the animal body—its movements, etc. By such an arrangement, it seems to the writer that our science would make rapid advancement, and our whole course of study would be a unity, which it certainly is not under the present system.

ANEURISM OF THE POSTERIOR AORTA, RUPTURE AND DEATH.

BY G. A. ROLLS, M.R.C.V.S., ARUNDEL.

THE history of this patient is given as follows by the owner:—

"Tom was a piebald pony, about fourteen hands high, and thirteen years old. He was bred from a circus mare, and passed through several ownerships before he came into my possession, about six years since. He was a stout, well-made pony, very fast and active, always carried plenty of flesh, and at times was very fat. Though a quiet worker, he was a very restless starter; but a thorough good roadster, and to the last would bravely collar a heavy load. I now come to the only symptom I remember, and which at the time I thought nothing of: *When on a long journey, and nearly tired, he would appear to knuckle over with his near hind fetlock-joint, as if from a slight cramp in the sinews.* I have noticed this some five or six times during the last two years. He showed no other symptom, and never had a day's illness whilst in my possession, or to my knowledge previously. The last few weeks of his life he seemed at times a little sluggish, or, more properly speaking, sleepy. On the morning of the day of his death he ate his corn and appeared perfectly well; but about 9 a.m. he lay down and could not get up. He was in considerable pain, and appeared to be suffering from an attack of Colic. I gave him a Colic draught, when he immediately became delirious, and fell first on his off and then on his near side very violently, then dashed at us and fell headlong. As soon as we got him up the pain ceased; he was perfectly quiet, but gradually became very cold and trembled so that he could scarcely stand. I noticed about

this time (11 o'clock a.m.) that his mouth and under the eyelids had lost all colour."

When seen by me, in response to a telegraphic summons, at 2 o'clock p.m., I found him standing quietly in his stall, ears cold, pulse extremely quick and only just perceptible, buccal and Schneiderian membranes pallid, muscular twitchings plainly visible above the elbow-joint, breathing normal. After hearing the above history, I proceeded to make a rectal examination, when I found an enormous pulsating tumour in the situation of the terminal portion of the posterior aorta. I could not feel its anterior extremity, as it extended beyond my reach. There was no difference in the temperature of either hind extremity, so far as I could judge, though the whole surface of the body was cold.

Diagnosis.—Aneurism of the posterior aorta; probable rupture, and approaching death.

Treatment.—Perfect quiet and absolute rest, warm clothing on the body, and the administration of diffusible stimulants.

The owner continues: "After you left he became gradually weaker. I saw him several times, but he seemed much in the same condition; no fresh symptoms. About 12 o'clock at night he wandered about strangely, was very quiet, ate a mouthful or two of bran and drank a little chilled water; after this he never moved, but fell dead without a struggle. The duration of his illness was about sixteen hours. He was noted in our district as one of the best ponies for miles round."

Post-mortem Examination.—A large quantity of thin bloody fluid in the abdomen, and a considerable amount of loose clotted blood. An enormous blood-clot held by the surrounding tissues in apposition to the inferior surface of the posterior aorta. The blood-clot I should think measured a foot and a half in length, by about the same in depth. The organs of the body were generally healthy.

[The specimen of Aortic Aneurism sent us by Mr. Rolls is one of the largest we have ever met with; and, in addition to its great size, it presents other points of much interest. When received, the vessel was still attached to a portion of the vertebral column—and so firmly that at first sight it almost appeared

as if a bony union existed; but it was found, on careful dissection, to consist of strong fibrous bands, formed, no doubt, from the original connective-tissue attachments.

The measurements of the portion of vessel sent, after it had been kept several days in a strong solution of carbolic acid, for the purpose of preservation, and then stuffed with tow to dry it, were as follows:—

Total length of vessel 15 inches.
Length of aneurismal sac 9 „
Greatest circumference 16½ „

The greater portion of the wall of the vessel contained bony deposit, which rendered it like a shell, showing no tendency to collapse in its empty state; this deposit was thickest and strongest on the superior or vertebral surface, indicating that in all probability this was the starting-point of the morbid changes in the arterial coats. On the inferior or abdominal surface, where these changes had not proceeded quite so far, there existed three smaller secondary aneurisms, which appeared to be of more recent date. The largest of these was situated at the point of the greatest circumference, and was quite the size of a hen's egg; the other two were situated at the origin of a *branch*—the posterior mesenteric artery. Very little or no bony deposit could be found in these secondary sacs; which probably indicates that while bony deposition was going on in the greater part of the dilated vessel, portions of the coats still remained tolerably healthy and became dilated afterwards, and thus formed these protrusions from the general sac.

A small portion of the aorta anterior to the aneurism, which we received, showed no sign of disease except in close contiguity to the sac; but behind the aneurism the aorta was much dilated and the parietes were so much attenuated that they had gradually given way, and the blood had dissected for itself a channel through and between the different coats into the connective tissue surrounding the vessel.

Mr. Rolls' specimen shows now, while drying, the same greasy condition referred to by Mr. Cox, in describing a similar case in the last September number of the *Veterinary Journal*.]

FRACTURE OF THE METACARPAL BONE AND *OS CORONÆ*, WITH SUCCESSFUL UNION.

BY J. W. HILL, M.R.C.V.S., WOLVERHAMPTON.

On the 19th of October last, I visited by request a black two-year-old waggon-gelding, the property of Mr. Wilson of Aston,—he describing it as being very lame and having a thick leg. On my arrival I found the colt standing, so to speak, on three legs; the near fore one being immensely swollen, the foot barely touching the ground with the toe, and the animal in great pain. I was informed he had been lame for three weeks, and was so discovered one morning in the stable—which, I should observe, was in construction similar to a cowhouse, the manger being low on the ground, in which the animal could easily put his feet, with wooden rails placed lengthways behind.

I diagnosed it as a case of fracture in the region of the fetlock-joint—probably in the first instance without separation; but to what extent could not say, on account of the swelling. With the object of reducing this and relieving the inflamed state of the limb, I bled him freely from the foot, and ordered hot fomentations. On my next visit, the 23rd, the limb was sufficiently fine for me to detect fracture with complete separation at the lower end of the large metacarpal bone, and also a longitudinal one of the *os coronæ*. The crepitus in both could be distinctly heard and felt; and, to use a common expression, the leg was dangling loose.

The swelling being still too considerable to apply pressure, I returned home, and on the following morning I put the animal in slings; and the condition of the limb being improved, I set the fractured parts in the following manner. First I wound a bandage, smeared at each turn with pitch, round and round the coronet; I then applied a wood splint in front (padded) from the hoof to the knee, and a similar one at the back of the leg. Between each, on either side, I placed a stout leather one, and made the whole secure with pitch bandages.

On the 27th I found the patient doing well, and with but little swelling or constitutional disturbance. I did not see him

again until the 26th of November—being informed in the meantime by Mr. Wilson that he was doing well, contented in the slings, splints remaining as placed, and that occasionally he threw weight on the leg.

I now removed the whole, with the exception of the coronet bandage, and was pleased to see my patient, when taken out of the slings, walk moderately sound, each step he took being firmer and better. In a week's time the remaining bandage was removed, and on 6th December a blister was applied to the leg and coronet, after which, when ready, he was to be turned out at grass; and I am now informed he is as good as sound.

LUXATION OF THE TRAPEZIUM.

BY THE SAME.

THE above being, I believe, in veterinary practice exceedingly rare,—in fact, I have no recollection of such being recorded in any of our works,—it affords me pleasure to send you a short outline of the case.

The subject is a black mare, the property of S. Loveridge, Esq., of Dane's Court. On the 9th of November last she was out with the Albrighton hounds, and in the evening of the same day I received a telegram from Stafford saying she was coming to Wolverhampton by train, as she was very lame. Examination on her arrival at the infirmary showed the injury to be in the near knee; and at first I expressed fears of fracture of one of the small bones. On flexing it, however, the trapezium was found to be easily movable upwards and outwards. There being some amount of swelling, with effusion and pain, round about the knee, I ordered the mare to be tied up, and hot fomentations applied to the joint; the following morning to have a light dose of physic. By that time the luxation was more than ever apparent—the bone being perfectly loose. The lameness, however, except on first starting, was not excessive; and she was quietly removed to her own stable, fomentations and rest to be continued.

On the 14th, the leg was so swollen and painful that I deemed it advisable to bleed her from the toe, with considerable benefit. In a fortnight's time, the swelling of the knee having gone down and become cool, gentle walking exercise was attempted; but the result was not satisfactory, so she was again kept quiet. There being now but little to be observed, beyond the luxation with slight effusion, I suggested the advisability of a blister, both as a means of keeping the knee quiet and also as a counter-irritant and absorbent; but being in the middle of the hunting season, it was thought desirable to try other measures first. Cold water and evaporating lotions were had recourse to, with quietude; and in a fortnight walking exercise was recommenced, and within the last week she has been ridden a few times for short distances. There is now no lameness to be observed; but when trotting that leg is carried slightly outwards, and extended a degree more than the other. The trapezium still continues slack, and I believe will for a considerable time, if not to the end of her days. Her owner shortly intends testing her again with hounds—when, should anything unfavourable occur (which I think likely) I will send you the result.

It was believed the accident was caused from another horse jumping on the limb; but I am of opinion it was done in coming to grief over a stiff fence, and going over several more afterwards.

HORSE PLAGUE IN EGYPT.—A correspondent writes from Egypt: "At Cairo the weather is milder and warmer than it usually is at this season. The horse-disease (which very much resembled blood-poisoning from serpent bite, although from some other specific poison acting in the same way) has ceased, after cutting off more than three-fourths of the equine animals."

MAD DOGS.—A mad dog was shot in the streets of Cardiff on January 6th, and two others in the outskirts—making the sixth mad dog shot within a few days. Thirty dogs suspected of having been bitten were destroyed in the neighbourhood. One mad dog was still at large near Cardiff. The county and borough police were ordered to seize all dogs; and notices were posted over the county requiring the owners of dogs to shut them up securely. A valuable horse bitten by a mad dog died on January 6th.

SMALL-POX AMONGST GOATS.—News from Gibraltar, of December 26th, announces that small-pox has appeared in an epizoötic form among the flocks of goats near Los Barrios; orders had been issued for preventing the milk or goats' flesh, or live stock from the infected districts coming into Gibraltar. A competent person had also been appointed to visit the district, and report thereon.

Editorial.

THE PART PLAYED BY MINUTE ORGANISMS IN DISEASE.

For now many years, attention has been closely directed to the presence of certain minute organisms which have been detected in animal bodies affected with particular maladies; and various opinions have been entertained as to the share these have in the evolution of such disorders, as well as to the nature of the organisms themselves.

Dr. Harz of Munich, in the *Centralblatt für die Medicinischen Wissenschaften*, states that, in opposition to what has been adduced by Brauell, Davaine, and other investigators, he has found that the rod-shaped bodies in Splenic Fever are motionless; that they never become constricted when treated with water, glycerine, or other agents; that they never divide into micrococci or similar cellular structures; and that they can be distinguished at the first glance from the bakteria of putrefaction. Bakteria, vibrios, micrococci, etc., are never found in the blood of Splenic Fever. The rod-shaped bodies of that disease can further be distinguished from the crystals that occur in the blood of animals affected by that malady, especially in horses, rats, and cats. The author finally concludes that, as the rod-shaped bodies of Splenic Fever are not organic structures, the signification given to them in the etiology of the disease by Davaine and others cannot be accepted.

The efficacy of pock-lymph has been attributed by several observers to the presence of small organisms of the nature of micrococcus. Hiller has recently studied this subject, and has published his investigations in the same journal. He reports that from 6840 separate inoculations, he finds that the degree of activity of the lymph and the proportion of micrococci present do not correspond. On the one hand, the development of the organisms was often at its greatest when the action of the lymph was falling off; and, on the other, lymph was often active though no bakteria were perceptible in it. Fresh diluted lymph having been put in vertical tubes in a freezing mixture, and slowly thawed after freezing, the upper half gave on inoculation 41·4 per cent. positive results, the lower half 63·8 per cent. It appears from this that the poison is associated with the solid constituents more than with the liquid. Boiled lymph was, without exception, inoperative. The addition of 1 to 4½ per cent. carbolic acid merely weakened the contagiousness of pock-lymph; while addition of glycerine left it unaltered. Strong dilutions weakened the action, while condensations exalted it; with evaporation the percentage of favourable cases was increased about one-half. In coagulated parts produced in the lymph, the active element was present in great quantity. Perfectly dried lymph is also active in high degree; hence we may infer that the communication of pox may occur by means of the crust and scurf of pustules which are rubbed off and float in the air. Inoculation with the blood of persons who were successfully inoculated proved inoperative; so also were the fresh contents of the vesicles, seven days after inoculation. It is

inferred that the cow-pox ferment is not contained in the blood, or not in the active state; and that very probably, also, the blood is not itself the seat of fermentation and reproduction of the poison.

It is to be observed that the part played by these minute organisms in the production of disease is far from being definitely ascertained, and that much has yet to be learned with regard to the pathogenesis of the destructive maladies in which they so often appear. In all the investigations which have for their object the elucidation of such obscure points in pathology, and which tax to the very utmost the patience, ingenuity, skill, and reasoning powers of man, errors are certain, from the very nature of things—errors in methods of investigation, errors in conclusions drawn from such investigation. Such appears to be the case with Dr. Klein's researches into the nature—histological and pathological—of Sheep-pox, in which certain organisms were supposed to be discovered and traced through various stages of development; thus verifying and greatly advancing the views promulgated by such excellent pathologists as Chauveau, Cohnheim, and many others. These discoveries by Dr. Klein caused much sensation in scientific circles, and were published in detail in the Proceedings of the Royal Society, of which the Doctor was made a Fellow through them. The researches having been undertaken by the Government, were also published in the Report of the Medical Officer of Health of the Privy Council, who pointed out their great value; the public, medical and scientific press likewise gave them long and commendatory notice; and in an early number of this journal we deemed it to be our duty to lay before the members of the veterinary profession an account of them—though without comment—as it appeared in the above Report, accompanied by the woodcuts with which it was illustrated in the Blue Book.

It is now apparently the fact that, through faulty manipulation or an error in investigation, Dr. Klein has been mistaken as to the nature of the appearances the diseased tissues presented; and the researches will therefore have to be commenced again. This is but the history of the advancement of human knowledge, and especially that of biology—in which there is so much that is mysterious, obscure, and baffling to the human mind. But such mistakes only tend to make the advancement of knowledge, if slow, at least more certain, by ensuring greater care on the part of investigators, and pointing out to them the sources of error.

We have been led to make these remarks from the fact that our contemporary, the *Veterinarian*, has recently alluded to Klein's mistake in a leading article in which we are somewhat sneered at for publishing the account of the researches. No allusion is of course made to the Royal Society's Proceedings, the Blue Book, the *Times* leading articles, or other media in which it appeared. Our contemporary was probably not aware of the fact that Klein's researches had been published in other than our own columns. It should certainly be the last to allude derisively to mistakes made in scientific investigations, if it would only reflect for a moment on its own history and its own mistakes—past and present.

We shall continue to consider it to be our highest privilege to lay before the profession whatever scientific discoveries are made which will in any way tend to advance our knowledge of pathology, pathological processes, or vital phenomena in general, feeling assured that we are of those who form the great majority of students in veterinary medicine, and who decline to cry out that nothing more is to be learned, and that science is barren. With the infinitely small minority who exult over such mistakes as those of Dr. Klein, because they are likely to drive us back to the age of "farriery," we can have no sympathy. Their day is gone by.

AN EPIZOÖTY IN POULTRY IN BOLOGNA.

In the *Gazetta Medico-Veterinaria* for May, June, July, and August last, P. Piana, Assistant in Pathological Anatomy in the Veterinary School of the Bologna University, gives a detailed and most important account of an outbreak of disease among poultry, which occurred in 1875 in that Italian province.

During September of that year, Piana, being in the country, heard complaints on every side of a disease which was making considerable ravages in the poultry yards of the farmers, and he set himself down to investigate it. One of the first points to be ascertained was whether the malady was contagious; and this fact was ascertained beyond a doubt,—thus justifying in his mind the designation of "Fowl Cholera" given to the malady in France, and by which it was described by Reynal. Piana proved its transmissibility by direct experiment, having taken a lot of healthy fowls and shut them up, so that they could have no communication with diseased ones. So long as they were thus isolated they remained healthy, but so soon as they mixed with the infected they became ill and perished.

Another point ascertained was that people or animals which ate the the fowls that had died, or were killed because they were sick, did not suffer thereby; even dogs and cats which ate their raw flesh were not indisposed.

The principal symptoms were as follows: When the fowls began to be unwell, the head and wings drooped, the plumage stood erect, the crest became livid, and the bird drank as if with difficulty—often plunging its beak in the water; it staggered when it attempted to walk, as if paraplegic; when the disease had made more progress the fowl sought the sun's warmth, and lay immovable. Digestion was suspended, as after death the gizzard was always found to contain untriturated food; the buccal cavity was full of mucosities, and the tail and surrounding parts were soiled by the fœtid liquid dejections. Death occurred in about thirty hours after the commencement of the attack, and was frequently preceded by convulsions and the ejection of fluid. Instances, however, were noted in which death took place quite suddenly and without any warning; and it was not rare to find in the roosts in the morning, a number of fowls dead and already cold, which appeared to be quite well the previous evening. Some of those attacked recovered, but generally after a week or two's convalescence they all at once succumbed.

The dead birds showed greenish patches in the abdominal region, as if putrefaction had begun during life; and on opening the bodies they exhaled a peculiar fœtid odour. The liver was covered with small white patches, the size of which varied from that of a grain of millet to a pea. With regard to the other modifications in this organ—such as volume, coloration and

density—the author carefully points out that there is nothing specific about these, as even in health the condition of the liver is extremely variable, this diversity depending on the kind of food fowls receive, the life they lead, ovulation, etc. The crop, ventriculus and gizzard, as well as the pancreas, kidneys and spleen, did not offer anything unusual. The intestine was injected externally, especially in its duodenal portion; internally it contained thick mucus, and a kind of diphtheritic exudate of a yellowish colour, which adhered to the villi. The mesentery exhibited very dark or greenish arborisations. The heart and large vessels were filled with black, pitchy-looking blood. Examined with the microscope, a certain number of the red globules were deformed and had lost their colouring matter; the proportion between the red and white globules did not appear to be altered. Among these elements of the blood were noticed cells derived from the lining membrane of the vessels, which had undergone a kind of colloid degeneration, and some micrococci. The lungs did not show any special alteration; sometimes they were gorged with blood, at other times they were normal.

The brain and spinal cord presented traces of hyperæmia. In the subcutaneous tissues, more particularly towards the neck and thighs, were discovered little, pale, oval concretions, sometimes scarcely visible to the naked eye, at other times as large as a barley grain. A microscopical examination of these demonstrated that they contained a small acarus, which was at first believed to have some relation to the *Sarcoptus cysticola* (Viziola), but a more careful scrutiny dispelled this notion. These were not at all considered as having anything to do with the malady, but were only looked upon as concomitants.

Turkeys, pheasants, and peacocks, which were also seized with the disorder, presented the same appearances.

Pursuing his histological researches still further, Piana discovered another kind of parasite, which he describes as follows: "If a shred of the changed and green-coloured mesentery is placed in the microscope, it is found that the coloration is due to spherical, oval, or pyriform corpuscles, which contain in their interior many granules of various sizes, having a colour ranging from pale to dark green, and olive to black. In addition to these granulations, some corpuscles contain one or more shining nuclei surrounded by a dark substance. There are also found in the mesentery a variable proportion of free granules similar to those contained in the corpuscles. All these elements—corpuscles and granules—are found in the texture of the mesentery, and cannot be separated from it by mere scraping; it is impossible to mistake them for the cells of the connective tissue. In order to ascertain more with regard to their nature, at the instigation of Professor Ercolani I submitted them to various manipulations. Acetic acid (pure), ammonia, and a solution of caustic potass (25 per cent.), had no apparent action on the corpuscles, but only rendered them more visible by dissolving the germinal matter in which they were imprisoned. Nitric, sulphuric and hydrochloric acids almost instantly deprived them of their colouring matter, without altering their shape unless they were left in them for some time. Alcohol, ether and oil of turpentine also decolorised them. Glycerine did not immediately affect them, but by prolonged immersion in it they became more pale. If a portion of this 'corpusculous' mesentery is placed in water, the corpuscles remain without alteration for a long time, while the other elements of the tissues are destroyed by putrefaction."

Piana was of opinion that these corpuscles were of a vegetable nature—*psorosperms;* and he thought they were the *psorospermium virides* of Pauliki. The question is, however, whether these organisms, which are so destructive to certain insects—and particularly to the silkworm, in which they develop and give rise to the disease called "Pebrine"—were the cause of this fatal

malady in the poultry, and did their presence cause the alteration in the blood observed in them? And how did they reach the mesentery, under what form, and how did they multiply? These questions occurred to Piana, and he endeavours to answer them. Reasoning by what occurs in other animals, he is disposed to think that the corpuscles are introduced into the bodies of the fowls as protococci along with the food, find their way into the intestinal canal, are there absorbed, and finally deposited in the mesentery, where their multiplication by division may go on very rapidly.

With regard to the question as to whether these psorosperms were really the active agent in producing the malady, Piana informs us that in a very small number of the fowls he dissected, and which had died before presenting all the characteristic symptoms of the disorder, he could not find any of these organisms; but, on the other hand, he relates the following experiments:—1. Beneath the skin of three healthy fowls from an uninfected place, he introduced a small clot of blood from a fowl which had died only a few moments before; the three fowls died within from eighteen to twenty hours. 2. Beneath the skin of another healthy fowl he inserted a minute fragment of mesentery containing psorosperms; this creature died in thirty-six hours. At the autopsy of these four birds, all the lesions previously described were found, but no corpuscles in the mesentery,—there were only some free micrococci at the point of inoculation. 3. Five guinea-pigs and three rabbits were inoculated with the blood; three of the guinea-pigs and one rabbit died, after twelve and twenty-four hours. 4. A number of fowls were well isolated, and attempts made to produce mediate infection in them by the intestinal absorption of water impregnated with matters from the digestive tube, and feeding them with portions of the mesentery, liver, blood, and other *débris*, of birds which had died of the disease. The results were constantly negative.

From these experiments, Piana concludes that if the psorosperms of the mesentery play any part in the production of this gallinaceous epizoöty, it is evident that their ingestion alone in the intestinal canal is insufficient, and that they must be assisted in their operations by certain of those anti-hygienic conditions amid which poultry are generally kept.

Piana terminates his long and able report with certain conclusions of a practical nature, among which we find a recommendation to keep roosts and poultry-yards clean and well ventilated, to isolate and even kill the first birds affected, to bury them and everything belonging to them most carefully, to disinfect the places in which they were kept, and to administer hyposulphite of soda and carbolic acid mixed in the water given the fowls to drink.

ROYAL AGRICULTURAL SOCIETY'S PRIZES.

THE examiners appointed to carry out the instructions with regard to these prizes—Messrs. Mayer, Hunt, and Gresswell—have awarded them as follows, after a highly creditable competition:—

A. B. Daniel, Royal Veterinary College	Gold medal and £20.
M. C. Yaxley, Norwich	Silver medal and £10.
F. Smith, Army Veterinary Department	Bronze medal and £5.

We heartily congratulate these gentlemen, the first recipients of these prizes, and we trust that next year may witness a larger number entering their names for the competition.

VETERINARY DEPARTMENT OF THE PRIVY COUNCIL.

IT is announced that Dr. Alexander Williams, who has been Secretary of the Veterinary Department of the Privy Council since its establishment, has resigned the appointment in consequence of ill-health. We are not aware what qualifications Dr. Williams was supposed to possess for such an important office, as his speciality appears to have been chemistry, he having been an assistant in chemistry for a short period at the Royal Agricultural College, Cirencester. He was, however, for some time Private Secretary to the late Sir Arthur Helps, Clerk to the Privy Council. The appointment was worth £1000 a-year; and it is not intended, we believe, to continue it, a re-organization of the Department being in contemplation. Such a change has been for a long time required, as the Department has rendered far less service than it might and should have done.

RABIES CANINA AND GLANDERS IN MANKIND.

IN 1874 Rabies Canina was fatal to 61 persons in England—namely, to 49 males and 12 females; four were children under five years of age, eight were boys from five to ten years of age; three were boys, and three were girls, of ten to twenty years; six were young men and one a young woman, of twenty to twenty-five; 29 were men, seven women, of twenty-five and upwards. The cases were distributed over the country as follows: Derbyshire, 2; Cheshire, 2; Lancashire, 1; West Riding of Yorkshire, 12; East Riding, 3; Durham, 1; Nottinghamshire, 1; Essex, 1; Warwickshire, 1; Staffordshire, 1; Middlesex, 7; Surrey, 5; Kent, 1; Sussex, 2. In the same year Glanders was fatal to four men.

VETERINARY HONOURS.

IT gives us unfeigned pleasure to annnounce that our highly distinguished and talented colleague, M. Henri Bouley, Director of the National Veterinary Schools of France, has been elected President of the Académie de Médecine of Paris for 1877; M. Baillarger, the well-known physician, having been chosen Vice-president. This very great distinction conferred on the eminent French veterinary surgeon, while it is a just tribute to the excellent services he has for so many years rendered to comparative pathology and sanitary science, is certainly a great and unprecedented honour for the veterinary profession, not only in France but in other countries. He has our warmest felicitations on this most auspicious event in his brilliant career.

We also learn that Mr. Billing, of the United States of America, and who is studying veterinary medicine at Berlin, has been elected an honorary and corresponding member of the Veterinary Scientific Society of Brandenberg. Prussia.

CONTAGIOUS DISEASES (ANIMALS) ACT, 1869.

(From a Supplement to the London Gazette, January 16, 1877.)

THE Lords of the Council have been advised that Cattle Plague has been detected in a cargo of cattle brought from Hamburg, and landed at the Foreign Cattle Market, Deptford, in the port of London.

The Lords of the Council have issued an order declaring that the regulations of the Fourth Schedule to the Act of 1869 shall apply to sheep and goats brought to Great Britain from a port or place in the German Empire, and landed in Great Britain, and such sheep and goats shall not be landed except at a landing-place within the respective defined parts of the following ports :—Glasgow, Goole, Grimsby, Hartlepool, Hull, Littlehampton, London, Middlesborough, Newcastle-upon-Tyne, Plymouth, Shields (North), Southampton, Sunderland. All such sheep and goats shall be slaughtered within ten days after the landing thereof, exclusive of the day of landing.

But this Article shall operate subject to the special provisions of the Order of Council defining parts of the port of Southampton, dated the 5th day of June, 1875.

The order was to take effect from January 16th.

We learn that this malady has appeared in several parts of the Continent, probably owing to the mobilisation of the Russian Army towards the Pruth.

The *Official Gazette* of Berlin announces an outbreak of Cattle Plague on the property belonging to the Concordia Sugar Refinery, near Brieg, in the Province of Silesia.

THE VETERINARY DEPARTMENT OF THE SWISS ARMY.

ACCORDING to the new organisation of the Swiss federal army, the veterinary department is completely separated from the other branches of the war administration. It is represented at the War Office by the Veterinary Surgeon-in-chief, who has the same rank as the chiefs of the four arms of the service, the Surgeon-in-chief and the Intendant-in-chief. For each division of the army there is a Divisional Veterinary Surgeon, who has the rank of Major; a veterinary officer is attached to him. In each squadron of Dragoons, consisting of 132 horses : in each battery of Field Artillery (*Artillerie de Campagne*), which has 130 horses : in each Battery of Mountain Artillery, in each Park column (*Colonne de Parc*), and in each division of a battalion of the Train, there is a Corps Veterinary Surgeon.

For the future veterinary surgeons are to learn their military duties as recruits in the Train for 55 days, and afterwards go to the Veterinary Officers' School for 28 days. After receiving the brevet rank of First Lieutenant, they are incorporated, and the following year attend instruction as recruits : in the Cavalry for 60 days, in the Field Artillery for 55 days, and in the Train for 45 days.

The pay is :—

First Lieutenant (corps veterinary surgeon), per day . . .	8 francs.
Captain, per day	10 ,,
Major (divisional veterinary surgeon), per day	12 ,,
Lieutenant-Colonel (veterinary surgeon-in-chief), per day . .	15 ,,

These officers receive, in addition, as "subsistence allowance" (*indemnité de vivres*) one franc a day. They have to purchase and keep a horse at their own expense, but they are allowed an indemnity of four francs *per diem*, the ration of the horse *in naturâ*, and two and a half francs for equipment. The uniform and equipment for the instruction of the recruit are provided by Government ; but each veterinary officer receives an indemnity of 450 francs for his regimental outfit.

Abstract of the Proceedings of the Royal College of Veterinary Surgeons, Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD JANUARY 11TH, 1877.

Present—Col. Sir F. Fitzwygram, Bart., President, in the chair; Professors Brown, Pritchard, Simonds; Messrs. Balls, Batt, Cartledge, Cartwright, Collins, Cox, Dray, Duguid, Gowing, Greaves, Moon, Moore, Withers, Woodger, and the Secretary.

The notice was read convening the meeting.

The minutes of the last meeting were read and confirmed.

The PRESIDENT said it was his sad duty to announce the untimely death of Mr. William Field, jun., from an accident in the hunting field. In him the members of Council had lost a most kind and genial friend, and the profession one of its brightest ornaments. Although comparatively speaking young in years, he had long been a member of the Council, and had been twice its President. He proposed that a letter of condolence be sent to Mr. Field, sen.

Mr. DRAY seconded the motion, which was unanimously carried.

Correspondence.

The PRESIDENT read a letter from Mr. Loch, in which he stated that he had been informed by the Privy Council Office authorities that the application of the Highland and Agricultural Society for a Charter had been rejected at the last meeting of the Council, and that the results had been communicated to the parties immediately interested.

Letters were received from Professors Walley and Williams and Mr. Hunt, regretting their inability to attend the meeting.

A letter from Mr. Parker of Birmingham, forwarding a specimen of diseased auricles in a horse's heart for the museum.

The SECRETARY said that Dr. Burdon Sanderson had seen the specimen, and stated that it was an ossification of the muscular structure of the right and left auricles of the heart, and regretted that the whole heart had not been presented to the museum.

On the motion of Mr. DRAY, seconded by Mr. CARTWRIGHT, a vote of thanks was awarded to Mr. Parker for his presentation.

A letter from Mr. Andrew Kershaw, M.R.C.V.S., of Kirton-in-Lindsey, Lincolnshire, addressed to the President, complaining that a Mr. Charles B. Chapman, residing in that town, not being a qualified practitioner, usurped the title of V.S. and M.R.C.V.S., not having been educated at any of the Veterinary Colleges, and suggesting that the name be advertised in one of the local papers. At the same time he appealed to the Council for the obtainment of a protective Act.

Letter from Mr. R. Laidlaw, M.R.C.V.S., Albany, New York, forwarding post-office order for eight shillings in payment of two copies of Register to be forwarded when published.

The SECRETARY announced the presentation by Mr. Fleming, of Part V. of his "Text-Book of Veterinary Obstetrics."

A vote of thanks was passed to Mr. Fleming on the motion of Mr. DRAY, seconded by Mr. DUGUID.

Election of Examiner for Scotland.

The SECRETARY stated that, in reference to the vacancy caused by the resignation of Mr. R. Paterson, he had written to the principals of the three schools in Scotland, asking them to nominate some gentleman of eminence who would be able to fill the vacancy. A letter had been received from Professor Walley, suggesting the names of Mr. Dewar, sen., Mid-Mar; Mr. John Lawson, Manchester; and Mr. Macgillivray, Banff; and, if the vacancy was in cattle pathology, especially recommending Mr. Dewar, from his long experience, as best fitted to fill the post. A letter had also been received from Professor McCall, in which he announced the death of Mr. Maclean (another of the Examiners), which event would necessitate the election of two Examiners instead of one. He recommended, as fitted to occupy the vacant post of Examiner, Mr. Paley, Dublin; Mr. T. D. Lambert, Dublin; Mr. Gray, Edinburgh; and Mr. Cunningham. Prof. McCall said that, personally, he wished one of the gentlemen from Dublin might be elected, as such a choice would tend to bind Irish friends more to the College. There was not, at present, any Irish representative at the Council—which was a misfortune that called for immediate redress.

The PRESIDENT agreed with what had been put forward by Prof. McCall in regard to the election of an Irish representative. There were now two vacancies in the Scotch section of the Board. The appointments now to be made would only continue until next July. He would propose Mr. Lambert, of Dublin, as one, and in regard to the other he would propose Mr. Harpley, with a view of bringing about an amalgamation of the London and Edinburgh section of the Board. To the first vacancy in the London section he intended to propose one of the Scotch Board.

On the ballot being taken, Mr. T. D. Lambert and Mr. M. J. Harpley were declared to be duly elected.

The SECRETARY stated that a letter had been received from Mr. Mayer, of Cirencester, asking for certain changes at the examination tables.

Professor SIMONDS moved that the letter received from Mr. Mayer be referred to the Court of Examiners, with a request that they report thereon in time for the next meeting of the Council.

Mr. GOWING seconded the motion.

The PRESIDENT explained that what the Court of Examiners wished was that another table should be constituted, as at present the cattle practice and horse practice were joined together. If the pupil was good in horse practice and very deficient in cattle practice, the four Examiners, though they had examined separately, would have to meet together and give a joint opinion; so that most of the Examiners felt it was exceedingly desirable, both in horse and cattle practice, that they should report separately.

Professor SIMONDS remarked that this would necessitate some alteration in the bye-law.

The motion was put and carried.

Examinations.

The SECRETARY reported that at the several meetings held for the Pass Examination on the 3rd, 4th, and 5th January, twelve students passed and thirteen were rejected; and at several meetings held on the 8th, 9th, and 10th, fifteen passed for their "First Examination," and ten were rejected.

The SECRETARY having called attention to some irregularity on the part of some of the students in the payment of their examination fees, and some conversation thereupon having ensued,—

It was resolved, on the motion of the President, that in future the Secretary be instructed to receive the fees in whatever way the students chose to send

them, provided they be sent at the regular time—viz., seven days prior to the examination taking place.

On the application of the Secretary, the sanction of the Council was given for the obtaining of a new Record and other official books.

Report of the Prize Committee.

The following Report was read by the Secretary :

"A meeting of the Prize Committee appointed by the Council of the Royal College of Veterinary Surgeons was held on December 27th, 1876, to draw up the rules and regulations for the guidance of the examiners, in the award of the prizes offered by the Royal Agricultural Society to graduates of the Royal College of Veterinary Surgeons who have passed their examinations 'with very great credit,' or 'with great credit.'

"Six candidates entered their names for the competition prizes.

"The Committee decided that three examiners appointed by the Council should form one undivided court ; and that each candidate be examined upon the same subjects, and for the same length of time,—the selection of subjects and time to be left to the discretion of the examiners.

"As the state of health or deviation therefrom which may be presented by the several animals under inspection cannot be known until the period of examination arrives, the Committee recommended—

"1. That each candidate be required to diagnose any disease under which the animal or animals may chance to be suffering.

"2. That he also be called upon further to examine the same animal, or others, with a view to testing his knowledge of special disease (not less than *three* special diseases being presumed to exist, and in turn considered in this way), note being particularly taken by the examiners of the aptitude of the candidate in the detail of his practical manipulation of the several animals whilst instituting his examination.

"3. Whatever the line and extent of the examination which may arise in the instance of the candidate first presenting himself, the same to be scrupulously followed in the examination of each other candidate, and no additional subject-matter introduced.

"The written examination shall embrace a description of the pathology, symptoms, and treatment, of not less than three diseases, which shall be determined by the examiners.

"The standard of qualification in the practical examination, and in the *viva-voce* examination, shall be the number of marks obtained in each section ; and a candidate shall be ineligible for the written examination if failing to obtain half of the total number of marks fixed by the examiners.

"It was decided that the practical and *viva-voce* examination take place on Saturday, January 6th, and that the written examination be held on Monday, January 8th, at the Royal College of Veterinary Surgeons. That three hours be allowed for the written examination—viz., from 10 to 1 o'clock p.m.

"The SECRETARY stated that four candidates presented themselves for examination. The practical examination took place on Saturday, January 6th, at 10 o'clock a.m., at the lairs of the Cattle Market, Islington ; the *viva-voce* examination at the Royal College of Veterinary Surgeons, on the afternoon of the same day ; and the written examination was held in the same place on Monday, January 8th, under the scrutiny of the examiners. The successful candidates were—Mr. Alex. B. Daniel, first prize ; Mr. Yaxley, second prize ; and Mr. F. Smith third prize."

Fellowship Committee.

Professors Walley, Williams, McCall ; Messrs. T. D. Broad, B. Cartledge, J. Collins, P.V.S., H. Ferguson, T. W. Gowing, T. Greaves, M. J. Harpley,

T. D. Lambert, J. Malcolm, T. W. Mayer, M. E. Naylor, D. Paley, W. Robertson, A. Robinson. Professors Simonds and Brown were nominated, but did not wish to serve on the Committee.

The SECRETARY read the following Report :—

"The Committee, after much consideration and after several meetings, beg to recommend to the Council the under-mentioned gentlemen for election as Primary Fellows.

"The Committee feel that an arbitrary selection of names, with whatever care it might be made, would probably create dissatisfaction.

"They have therefore adopted certain recognsed quialifications as the bases of their recommendations ; namely :—

"1. Office of President of the Royal College of Veterinary Surgeons.

"2. Professorships—to be limited to veterinary surgeons who have held office as professors for not less than five years, and have not since left the profession.

"4. Office of President of Veterinary Medical Societies.

"5. Veterinary Authors.

"6. Distinction in Original Research.

"7. Members of Council who have been three times honoured by the profession by election as Members of Council ; or who have been twice elected as Vice-Presidents of the Royal College of Veterinary Surgeons.

"8. Her Majesty's Veterinary Surgeon in England, Ireland, and Scotland.

"9. The veterinary surgeons to the Royal Agricultural Societies of England, Scotland, and Ireland.

"10. The Father of the Profession.

"The Committee think that the Army Veterinary Surgeons should be placed on a different footing, as the nature of the military service and their frequent absence from home does not in general admit of their obtaining some of the above qualifications. The Committee therefore suggest that the Principal Veterinary Surgeon should be requested to select eight names for the approval of the Council.

"The Committee feel that the veterinary surgeons practising in Ireland are also placed under somewhat similar disadvantages, as the distance has generally disinclined them to take office in Council ; and, again, there are no Veterinary Medical Societies in Ireland. The Committee therefore suggest that the Irish section of their Committee should be requested to select a number of names from veterinary surgeons practising in Ireland for the approval of Council, not exceeding the proportion (5 per cent.) allowed by the Charter."

List of Members proposed for Fellows.

Anderton, John W., President Yorkshire V.M.S. 1875 ; Balfour, Andrew, President Scottish Metropolitan V.M.S. 1875 ; Bennett, John, oldest living member, Vice-President R.C.V.S. 1853 ; Blakeway, Francis, President Midland Counties V.M.S. 1871 to 1873 ; Borthwick, John, President Scottish Metropolitan V.M.S. 1872 ; Broad, Thomas D., President West of England V.M.S., Member of Council R.C.V.S. 1861 to 1874 ; Broad, James C., Member of Council R.C.V S. 1867 to 1876 ; Broughton, William, President Yorkshire V.M.S. 1874 ; Brown, G. T., Professor, President R.C.V.S. 1873, and Member of Council 1864, Examiner 1868 to 1872 ; Charles, John, President Midland Counties V.M.S. 1868 and 1869 ; Carter, Joseph S., President Yorkshire V.M.S. 1873 ; Cartledge, B., President R.C.V.S. 1871, Member of Council 1859 to 1874, Examiner 1859 to 1876 ; Cartwright, H. J., Vice-President R.C.V.S. 1868, 1874, 1876 ; Cartwright, W. A., Original Research ; Cockburn, William, Examiner R.C.V.S. 1856 to 1870 ; Cox, John Roalfe, President Central V.M.S. 1874 ; Cuthbert, John, President Yorkshire V.M.S.

1872; Dobson, Joseph R., Author; Dray, Edward C., President R.C.V.S. 1874, Member of Council 1872, President Yorkshire V.M.S. 1864; Ferguson, Hugh, Professor, H.M.V.S. in Ireland, Veterinary Department Privy Council; Field, William, President R.C.V.S. 1854 and 1855, Member of Council 1844 to 1864, Examiner 1844 to 1863, Treasurer 1846 to 1850; Freeman, James, President Yorkshire V.M.S.; Gamgee, Joseph, Author; Gowing, T. W., Member of Council 1854 to 1857 and 1868 to 1874, President Central V.M.S. 1875; Greaves, Thomas, President R.C.V.S. 1869, Member of Council 1864 to 1876, President Lancashire V.M.S. 1864, Yorkshire V.M.S. 1867, Liverpool V.M.S. 1869, and Midland Counties V.M.S. 1874; Gregory, Tom D., President West of England V.M.S. 1868; Greswell, Dan, Original Research; Heyes, Gilbert, President Liverpool V.M.S. 1868; Howell, James, President Lancashire V.M.S. 1867; Hunt, Robert L., President R.C.V.S. 1864, Member of Council 1868 to 1872, Examiner 1872; Hunting, Charles, Member of Council R.C.V.S. 1868 to 1870, President North of England V.M.S. 1864, Author; King, Henry, President Midland Counties V.M.S. 1867; Law, James, Professor Cornell University, Author; Lupton, James J., Author; Lyon, William, Examiner 1844 to 1850; McCall, James, Professor Veterinary College, Glasgow; Mavor, Alexander, Original Research; Mavor, Fred. J., President Central V.M.S. 1873, Author; Mayer, Thomas W., Member of Council R.C.V.S. 1844, Examiner 1851 to 1856, 1873 to 1876, Professor Cirencester Agricultural College; McEachran, D., Professor Veterinary College, Montreal; Moon, James, Member of Council R.C.V.S. 1860 to 1876; Moore, James, Author; Naylor, M. E., President Yorkshire V.M.S. 1869; Paterson, Robert B., Examiner R.C.V.S. 1870 to 1876; Pritchard, Richard, Member of Council R.C.V.S. 1848 to 1876, Examiner 1859 to 1876; Pritchard, William, Professor R.V.C., Member of Council 1868 to 1876; Raddall, Warne, President West of England V.M.S.; Robb, George, Examiner R.C.V.S. 1851 to 1856; Robertson, William, Examiner R.C.V.S. 1860 to 1876, President Scottish Metropolitan V.M.S. 1871; Robinson, Alexander, Examiner R.C.V.S. 1870 to 1876; Simonds, J. B., Professor R.V.C., President R.C.V.S. 1862, Member of Council 1844 to 1876, Author; Smith, William, President Eastern Counties V.M.S. 1868; Taylor, Charles, President Midland Counties V.M.S.; Taylor, Peter, President Lancashire V.M.S. 1865; Taylor, Thomas, President Lancashire V.M.S. 1868; Varnell, George, late Professor R.V.C., President R.C.V.S. 1865, Member of Council 1852 to 1868; Williams, George, V.S. to Her Majesty; Withers, S. H., Member of Council R.C.V.S. 1849 to 1873.

Army.—Bath, H., Royal Artillery; Collins, F. F., Staff V.S.; Gardiner, B. C. R., Staff V.S.; Gloag, I. W., Half-pay; Gudgin, T. P., Staff V.S.; Harpley, M. J., Royal Horse Guards; Lambert, James, 17th Lancers; Owles, Alfred J., Staff V.S.; Poyser, Richard, 6th Dragoon Guards; Steel, Charles, 12th Lancers.

The following gentlemen are eligible if the Council take the view put forward by Mr. Greaves in his letter of January 5th:—

Collins, James, Principal Veterinary Surgeon; Fleming, George, Author, Examiner and Councilman R.C.V.S., President Central V.M.S.; Lambert, T. D., V.S. Royal Agricultural Society of Ireland; Morgan, George, President Liverpool V.M.S. 1875; Storrar, James, President Liverpool V.M.S. 1872; Whittle, W., President Lancashire V.M.S. 1871; Williams, W., Professor and Author; Woods, William, President Liverpool V.M.S. 1876.

The PRESIDENT moved "That the qualifications stated in the report be accepted as necessary for the election of Fellows."

Mr. NAYLOR seconded the motion, which was carried.

The PRESIDENT said the following letter had been received from Mr. Greaves:—

"Knott Mill, Manchester, *January 5th*, 1877.

"DEAR SIR,—I intended, if I had been present, to raise the question of opening the door a little wider for the admission of Fellows; as it is, we are excluding many of our best men. I know in accordance with the construction members of Council at present put upon the Charter, we must do so But in my opinion the wording of the Charter is not definite; it will bear another interpretation. It nowhere emphatically says he must have been a member of such College for fifteen years; the clause, 'That such of the members of the said College, or such persons being members of the said College as shall have practised as veterinary surgeons for fifteen years at least,' does not in my humble opinion imply that such must have been a member of the said College for fifteen years, but that he must have practised as a veterinary surgeon for fifteen years and be a member of the said College at the date hereof. You may say, 'Why, this will open the door to any and every farrier or quack in the country who may have practised as a veterinary surgeon for fifteen years and gained his diploma only yesterday!' I say no; we have a discretionary power given us in our Charter, 'to elect in such manner as we deem best.' I would therefore respectfully suggest that those gentlemen who have undergone a regular course of instruction at the Edinburgh Veterinary College, gained the Highland Society's Certificate fifteen years ago, and been practising as veterinary surgeons for fifteen years at least, and are now holders of our diploma, shall be deemed eligible to be elected Fellows.

(Signed) "THOS. GREAVES.

"To Mr. Coates, Secretary."

The PRESIDENT said, of course when the special examination was given to them they were accepted as members of the profession, and the principle had been recognised by the Council in many cases. He had obtained the opinion of Mr. Loch on the point, and that gentleman had stated that he saw no reason why those who had passed a *pro-formâ* examination at the College, after having practised for fifteen years altogether, should not, under the conditions of the Supplementary Charter, be elected Fellows.

The PRESIDENT then proposed, "That the names of Fellows as read over be approved, and that the Committee of Selection be authorised to write to each of the gentlemen to know whether they accept; that a fair time be given to them for acceptance, and that, in the course of a month or five weeks, a special meeting of Council be called to elect those who so accept."

Mr. GREAVES seconded the motion, which was carried—Professor Simonds dissenting.

Professor SIMONDS said, in order to save the Secretary the trouble of writing to him, he wished to state that he had no wish or disposition to accept the honour which had been offered to him and approved by the vote that had been taken.

The PRESIDENT further moved, "That the Committee of Selection be authorised to add, for the similar approval of Council at next meeting, the names of any other gentlemen qualified as above who may have been accidentally left out of the list, and against whom there may be no objection, as far as the Committee think; and also that they be empowered to write to the gentlemen who may be selected to represent the Irish section of the profession."

Mr. CARTLEDGE seconded the motion, which was carried.

College Fund.

The TREASURER reported that he had bought £208 1*s.* 3*d.* Consols in the name of the three Trustees, and that the balance at the bankers' was

£31 3*s.* 10*d.*, which included two additional subscriptions received by the Secretary of two guineas each.

Finance Committee.

The report showed that the present liabilities amounted to £164 9*s.*, which the Committee recommended should be discharged. From the Treasurer's balance-sheet it appeared that there was a deficiency of £97 15*s.* 5*d.*

To meet this deficiency it was arranged to borrow £100 from the bankers.

On the motion of the PRESIDENT, seconded by Mr. DRAY, the report was received and adopted.

Cheques were ordered to be drawn for the current expenses.

Mr. Collins was elected Trustee in place of Mr. Field, jun., deceased.

Examination of Students.

Professor SIMONDS called attention to a subject of which he had given notice—namely, a reconsideration of the division that had been made of the subjects upon which students were to be examined at the several examinations. If he remembered rightly, a student at his first examination was to be examined on chemistry, materia medica, botany, pharmacy, and toxicology; and, in addition to pharmacy, the student was to be called upon to write a prescription. So far as writing a prescription was concerned, he thought that was a matter of either little or great importance, according to the view which each individual might take. If the student was to be called upon to write a prescription after the manner which was usually adopted, he would necessarily require to have a knowledge at any rate of the Latin grammar: but unfortunately such a state of things had not yet been arrived at. There was a large number of students who, on entering the schools, had no classical education at all, and therefore it was apparent at once that those students could not comply with that part of the regulation. It had been suggested by the Pharmaceutical Society and by some other learned bodies that prescriptions should be written plainly and in English and in full, because great injury had often resulted from persons attempting to write that which they did not at all understand. He had no objection whatever to students at the right and proper time writing a prescription—and if it could not be written correctly in Latin, let it be written in English; but he thought that that practical examination should be carried out conjointly with other practical examinations. It was absolutely necessary for a student to pass his examination in practical pharmacy at the time he passed his examination on other practical subjects; and the reason he held that opinion was because it was not wise for a student to become at all acquainted with practical pharmacy unless he knew something, at any rate, of materia medica, and even of chemistry. During his first examination he actually received instructions upon these two very important subjects; and he had to pass his first examination upon them. It was very clear, then, that unless he had obtained a knowledge of agents and their properties he could not at all properly pass an examination in practical pharmacy. He thought, for those reasons and some others which might be added, that it would be far better for practical pharmacy and toxicology also to be removed from the first examination and placed with the las examination.

Professor BROWN supported Professor Simonds' proposition. He would confine himself to pharmacy, as toxicology was a subject with which he had nothing at all to do. Professor Simonds had suggested that pharmacy was a subject which required a preliminary knowledge both of chemistry and materia medica; and speaking from the experience he (Prof. Brown) had had during the previous few weeks, he could say that he had utterly failed in his attempt to teach the freshmen anything at all relating to the construction of

the most simple prescription. Some of them did not know the difference between nitrate of potash and aloes, and some of them did not even know the meaning of the word "drug." Under these circumstances it was simply ridiculous for him to continue lecturing on the preliminaries of the construction of prescriptions. He asked if it were reasonable to suppose that a man knowing nothing previously, could be plunged at once into writing prescriptions. The subject was altogether a complicated one, and he quite agreed with Professor Simonds that it should be relegated to the last examination.

Mr. GOWING was afraid that if the prescriptions were written in English the farmers might continue to use them to the pecuniary disadvantage of the local veterinary surgeon.

The PRESIDENT pointed out that the new scheme, which had been objected to by the previous speakers, had been drawn up not very long ago, after considerable consultation with the heads and professors of all the schools; and it was too much to say that it was a failure, because it had not yet been at all tried. It was erroneous in Professor Brown to say that the students knew so little at the end of the time; because the students coming up under the new scheme, which had not yet been tried, would have had a whole year's instruction instead of the more limited time they at present had.

Professor SIMONDS explained that materia medica was a subject confined to the summer, and that there would be only two months during which an opportunity would be given of acquiring a knowledge of the articles of medicine.

The PRESIDENT said that that was an arrangement of the school; but as far as the Royal College of Veterinary Surgeons was concerned, a student would not be eligible for his first examination until he had studied three terms; and at the end of these three terms it was to be hoped that he would know something of pharmacy and materia medica; but considering the views that had been urged by Professor Simonds and Professor Brown, he should propose that the words "the writing of prescriptions" should be struck out.

Mr. GREAVES, while agreeing with the remarks that had been made, thought it would be well to ascertain the views of the principals of the other colleges upon the subject.

Mr. COLLINS thought that materia medica and pharmacy were in their proper position in being included in the first examination, as many students had been, previous to entering the schools, employed by veterinary surgeons, and were acquainted with drugs.

After some further conversation on the subject,—

The PRESIDENT suggested that, the question being a practical one, and one which the Council as a body could not very well discuss, a small committee should be appointed to consult with the schools and examiners, and to report to the next Council meeting.

This proposition was acceded to, and Mr. Collins, Mr. Dray, and Mr. Duguid were appointed the members of the Committee.

Examination Fees.

Professor SIMONDS called attention to the regulation which had recently been agreed upon by the Council with regard to the payment of fees for examination. There would be three examinations, at any one of which a student might be rejected twice and still be eligible to pass in the second and third examination; so that it was very clear that a student could have two rejections on his first, two on his second, and two on his third. It was quite possible a case of that kind might occur; and a man under such circumstances would be consequently called upon to pay three guineas for each of the examinations; so that six at three guineas would amount to eighteen

guineas, in addition to the ten guineas which the Council were entitled to charge under the Charter, making a total sum of twenty-eight guineas—a sum which absolutely exceeded that charged for admission to any one of the colleges, and for three years' education. It might be said, "Well, then, increase your fees;" but until a scale of fees was agreed upon in England and Scotland, he did not see much prospect of that increase. He thought that by charging at the rate of the proposed scale the Royal College of Veterinary Surgeons would render itself liable to a false accusation. It was known throughout the profession that the College was exceedingly poor, and some unsuccessful students might say that they were rejected not so much for want of information as that the College was desirous of enlarging its funds. In order, therefore, to remove the grounds for any such accusation, he thought the students should be allowed to come up a second time for examination after being rejected once, without the payment of any fee, but that on coming up a third time they should pay the fee. This question had been agitating the Royal College of Surgeons, and the plan he was sketching was one which they were desirous of carrying out. They did not charge any man a fee for the second examination; nor did the Royal College of Veterinary Surgeons formerly charge a fee until a man had been rejected upon either his first examination or his second examination a second time. Then he was called upon to pay a fee of three guineas. The expenses being increased, shut the door upon the number of students coming up for examination. His own idea was that it would be more advantageous to all parties if the course were adopted which was, it might be said, the rule of the College at the present time. If a compromise were needed, he would not object to a small fee being paid, because it was neither right nor fair that the examiners should meet together without being paid; but at the same time the students should not be mulcted unnecessarily and driven out of the profession. There was no doubt that the numbers would be diminished for a year or two to come, by calling upon students to be three years at the College instead of two; and now it appeared to him that means were being taken to diminish the number in another direction. Under the circumstances, it was a matter for deep consideration whether some plan could not be found which would be less objectionable than the one which had been adopted by the Council.

Mr. GOWING said it was not a question of the College being poor, but one of justice and equity to the student. He agreed generally with the remarks that had been made by Professor Simonds.

Mr. COX took strong objection to the suggestion made by Professor Simonds that the Council would be actuated by mere mercenary motives. The Council had no other desire than to raise the status of the profession. If it was desirable to give the student an extra chance, let it be so, but at no loss to the College.

The PRESIDENT thought that in this matter it would be extremely desirable that the Council should adhere to the resolution they arrived at six months ago. The proposition made was now inconsistent with the general policy at which the Council arrived at that time. The proposition made by Professor Simonds was, he thought, injurious to the students themselves, because it was a premium upon idleness; and it would be injurious to the schools, because a lot of old and idle students hanging about a college were an injury to the younger students. He wished also to state his own belief that the students did not wish for what Professor Simonds had proposed. He believed that the Scotch schools did not wish for it; and he was, on the previous day, at a meeting of the Royal Veterinary College, Camden Town, and he found that the Governors and the Principal himself attributed the very excessive number of rejections during the last two years to the fact that the Royal Veterinary College charged only one fixed fee and thereby encouraged

idleness among the students. Regarding the idea that the students would suspect that the Examiners rejected them in order to get increased fees, he thought that the Council and the Court of Examiners could well afford to disregard any such idea. It should also be remembered that even under the new system there was very little gained out of students; and he put it broadly on this ground—that there was no reason why the College should suffer a pecuniary disadvantage on account of the idleness of students, and he would certainly move that the College adhere to its present scheme.

Mr. COLLINS thought that if the bye-laws were abrogated the Council would be stultifying themselves. He agreed with the remarks of the President, and begged to second the motion.

After some observations from Professor BROWN and Mr. GREAVES, the motion was put and carried.

This concluded the business of the first meeting.

SPECIAL MEETING.

A special meeting was afterwards held, when the proposed new bye-laws were further considered, and some verbal alterations made.

The PRESIDENT said he should ask the Council to adopt the new bye-laws at the next meeting, and in the mean time to suspend in the Council-room any necessary alterations that might be made in them.

The Council then adjourned.

THE SCOTTISH METROPOLITAN VETERINARY MEDICAL SOCIETY.

THE quarterly meeting was held in the London Hotel, St. Andrew Square, Edinburgh, on Wednesday, December 13th, at half-past two o'clock—Mr. Balfour, of Kirkcaldy, President, in the chair. There were present: Professors Williams, Walley, Baird, Vaughan, Johnstone, and M'Fadyean; Messrs. Robertson, Kelso; Borthwick, Kirkliston; Connachie, Selkirk; Aitken, Cumming, Rutherford, Aitken, jun., Edinburgh; Balfour, Markinch; Young, East Calder; Brown, West Calder; Boyd, Melrose; Connachie, Aytoun; Jones, Dick's Veterinary College; Dally, Bathgate; M'Intosh, Dumfries; Reid, Leith; Cunningham, secretary; and others.

Messrs. Connachie (Aytoun), Reid, M'Intosh, Dally, and Professor M'Fadyean were nominated as members. Election to take place at next meeting.

As office-bearers for ensuing year, Professor WILLIAMS referred to the manner in which the secretary (Mr. Cunningham, Slateford) had performed the duties of the office for the last four years, and proposed that he should be elected president. This being seconded by Professor Walley, was agreed to. As vice-presidents, Mr. Connachie, Selkirk; Mr. Baird, Veterinary College; and Mr. Rutherford, Edinburgh, were elected; and Mr. Cumming, Rose Street, Edinburgh, treasurer and secretary.

The best means for the removal of irregularities and superfluous growths from the molar teeth was again taken into consideration. Professors Williams and Walley had tried Thompson's tooth shears since last meeting, and spoke favourably of them; Professor Williams also showing a French instrument, of very neat appearance and construction, which he had found to act remarkably well. Mr. Robertson described a modification of this instrument which he had seen in use many years ago.

Professor WILLIAMS gave details of a case of Scirrhous Cancer in a horse—

the only instance of Scirrhous Cancer in the horse he had as yet met with. The parts involved were the external surface of the heart, roots of the large bloodvessels, and the capsule of the left kidney, the whole mass weighing 28 lbs. (heart included). Strange to say, no signs of illness had been observed till a fortnight before his death, and the symptoms then were those of heart disease, but of a rather obscure character. The Professor described the case minutely, and showed part of the diseased structure. In answer to inquiries, he stated that, along with Dr. Young and Mr. Vaughan, he had made a most careful examination (microscopically and otherwise), and had no hesitation in saying that the tumour was not of a fibrous or sarcomatous nature, but one of decided Scirrhous Cancer, and confirmed his opinion as to the existence at times of Scirrhous Cancer in the horse—a fact which he had been beginning to doubt, owing to the rarity of its appearance as compared with other forms of cancer.

Professor WALLEY showed a dried specimen of the heart of a cart-horse, in which ossification of the right auricle and dilation of the large veins entering into it had taken place to an extreme degree, the organ before being dried weighing 14 lbs.; also another dried specimen of a pulmonary cyst, having a free communication with the œsophagus or gullet. The cyst was a very large one, involving the greater part of the posterior portion of one of the lungs; and the great peculiarity about it was that the food must have had a regular passage to and from the cyst into the œsophagus—the food in it being as fresh as that contained in the stomach. How the animal could exist in such circumstances is difficult to understand. The case had come under the notice of Mr. Kettle, of Market Drayton, a friend of Professor Walley's—the case occurring in the practice of Mr. Walters, Newport. The animal was a three-year-old heifer, bought in March, cast calf in August, began then to droop and fail, and was destroyed on 16th October, under the idea that abscesses were forming in the lungs, and that her disease was scrofulous. About a fortnight before she was destroyed, an abscess formed in the arm, which was found to contain three half-pints of healthy pus. Professor Walley thought that the cyst had originated either in the lodgment of a foreign body in the œsophagus, followed by laceration of the œsophageal walls, and the ultimate formation of an abscess and cyst in the lung, or more probably that an abscess had been formed in the lung, which had emptied itself into the œsophagus, and thus established a fistulous communication. The formation of the abscess in the arm strengthened the latter opinion.

Mr. ROBERTSON stated, in connection with this subject, that he had seen a case in which a piece of turnip had been forced by a probang through the œsophagus, and was found lodged in one of the lungs, while around it the parts were in such a state as to make one believe that in course of time an abscess would be established. The animal lived eight days after the injury.

Mr. BAIRD said that there had been a good deal said about Rabies in dogs lately—that it was a long time since he had seen anything like a mad dog (in Edinburgh, at least),—but that some short time ago he had met with a case in one of the back yards or greens of one of the houses in town, with symptoms alarmingly like those of Rabies. A clothes-rope let down from the top of the wall round the animal's neck, and a little prussic acid afterwards, had, however, disposed of the matter very satisfactorily. Mr. Baird thought it was well that such an animal had been prevented from getting to the street.

Mr. RUTHERFORD (Edinburgh) made some remarks on the existence of *ante-mortem* clots. He had given the subject a good deal of attention lately. He found these clots most commonly in cases of Pneumonia—double Pneu-

monia especially—and in the pulmonary veins and left side of the heart. He thought the subject a very interesting one, and proposed that it should be taken up by some of the professors or others, and a paper read on the subject.

A very large clot, found by Mr. Baird on a *post-mortem* examination at a knacker's yard, was shown by Professor Walley.

The SECRETARY suggested that as Mr. Rutherford had given his attention to the matter, a paper from Mr. Rutherford himself would be most appropriate and acceptable. He could scarcely, however, believe that such an enormous clot as that shown could be formed, or forming, and the animal live forty-eight hours, or anything approaching to it. That *ante-mortem* clots were formed seemed beyond doubt ; but he had always—rightly or wrongly—looked on the large yellowish-white clots found frequently on *post-mortem* examination in many of the large bloodvessels and chambers of the heart as the result of the coagulation of the blood and other *post-mortem* changes.

The discussion on Professor Williams' remarks on "Fardel-bound," made at last meeting, was then proceeded with.

Mr. CONNACHIE (Selkirk) was inclined to adopt and approve of the views advanced by Professor Williams. During the course of a large practice for a considerable number of years, he had been of opinion that by far too much drastic purgative medicine was administered to cattle, and he had found much better and more satisfactory results from moderate purgatives followed by stimulants. The indiscriminate use of purgative medicine when impaction had become thoroughly established, or when inflammation of the stomach or of the intestines existed, could not but do an immense amount of mischief.

Mr. BOYD (of Melrose), since last meeting, had been called to six cases of "Fardel-bound" in one byre, caused by the eating of badly-frosted turnips. One animal was dead before he saw it. The others were treated by mild laxatives and sedatives and antacids, as recommended by Professor Williams, and made a good recovery.

Mr. BAIRD could not but insist on the existence of impaction of the stomach and bowels in all animals. He had lately had one of excessive overloading and distension of the stomach in a foal, in which the stomach and contents weighed at least 75 lbs. This enormous weight was almost incredible, yet such was actually the case ; and during his practice in Fifeshire, and elsewhere, he had frequently seen cases in which such thorough impaction and drying of the contents of the third stomach existed, that the organ might have been stood on or used as a football. His practice had been, when called in at the outset of such attacks, to administer a strong dose of purgative medicines, and repeat it if necessary ; and when purgation was freely established, little more had been necessary.

Mr. BALFOUR having to leave, Mr. Robertson was called to the chair. Before leaving, however, Mr. Balfour (Kirkcaldy) said he was frequently called to treat cases of "Fardel-bound" from various causes, and this had led him to make the suggestion which led to Professor Williams laying his views before the Society. He believed in purgatives at the commencement of the attack ; but if the impaction was simply the result or cause of inflammation of the fourth stomach or bowels, the treatment recommended by Professor Williams was certainly the most judicious.

Mr. MACKINTOSH (Dumfries) made somewhat similar remarks, and stated that for a long time he had been struck by the fact that on making *post-mortem* examinations of animals that had died from affections of the bowels, inflammation of the mucous membrane of the fourth stomach was almost invariably present. He thought that this fact had been too much overlooked. He was certainly indebted to Professor Williams for introducing the subject, and hoped good would result from the discussion.

Professor WALLEY deprecated the tendency shown by veterinary surgeons to mix up the various stomachic affections of the ox with intestinal derangements, and impaction of the omasum with Enteritis and Gastritis; and observed that the term "Fardel-bound" was not an unmeaning or barbarous one—as "fardel" signified a burden, and in this sense was correct, while the word "bound" was a provincial term synonymous with costiveness. Professor Walley further remarked: "The natural condition of the third stomach is not, as Professor Williams would have us believe, one of dryness: its condition in this respect depends materially upon the treatment to which the animal has been subjected for a few days prior to death. In all animals on grass or other succulent food, and having access to water, its contents are moist; while in those which have been fed on dry materials they are hard. Butchers invariably give straw to animals, and stint them of water, a few days prior to slaughter. Many of the cattle killed in Leith and Edinburgh are foreign animals, in which, from the allowance of hay (often dry and of inferior quality), from the forced inactivity of the voyage, and from the meagre supply of water, the whole of the contents of the digestive apparatus are in an unnaturally dry condition, as shown by the state of the fæces, which often resemble those of the ass. I am informed by Mr. Laws (a student of the College) that in France, and other continental countries where *octroi* duties are paid on the live weight, animals are stinted of water and food for some days before slaughter, in order to reduce their weight, and in those cases the contents of the third stomach are dry; but there is a material difference between this dryness and that of impaction: in the latter the food is like a baked cake, often capable of pulverisation, and when pulverised can often be blown away from the hand; in other cases it is hard and tenacious. Inactivity, leading to retention, of the third stomach is, as a rule (in the first instance), only functional. It is caused (1) by withdrawal of nervous force in brain and spinal affections, and in depraved conditions of the blood,—hence seen in Parturient Apoplexy, Red-water, etc.; (2) by interference with all the digestive functions in prolonged disease of any kind—as Pleuro-pneumonia Zymotica, Rinderpest, Eczema Epizoötica, Inflammation of lungs, liver, or bowels, etc.; (3) by paralysis of the coats of the stomach, as the result of irritation and over-exertion, brought about by feeding upon coarse, innutritious, irritating, or acrid food, or from the effects of medicines or poisons, especially lead compounds, and irritant vegetable poisons, as the ranunculaceæ. Impaction of the third stomach is a deranged functional disease, marked by well-known symptoms which distinguish it from disease of any of the other stomachs, and instead of being produced by succulent is usually produced by dry, indigestible, irritating, and acrid food, and food having a tendency to aggregate in masses—especially wheat, bean, or pea meal; it is also caused by half-dried turnip-tops, feg, coarse ryegrass (especially when seeded), undecorticated cotton-cake, wheat, buckwheat, barley, beech mast, acorns, etc. The earlier symptoms are simply those of digestive derangement, are not diagnostic, and are often accompanied by those of pulmonary congestion, —hence the mistake for Pleuro-pneumonia; they are irritable, or, as it is sometimes termed, skittering diarrhœa; the discharges, which seldom exceed four or five in number, are composed of serous fluid, with a quantity of half-masticated vegetable matter in suspension; the pulse and respiration are not much interfered with at the onset, neither are the mucous membranes heightened in colour, nor the temperature elevated; the appetite and rumination, however, are partially or totally suspended; the secretion of milk, in milch animals, partially suppressed; grunt and cough may or may not be present. In the course of a day or two the symptoms are aggravated, the grunt becomes more frequent, and, as time runs on, painful; the eye tolerably bright and anxious; constipation marked; and if any fæces are present in

the rectum, they are hard, dark in colour, glazed, and frequently streaked with blood; and very often small scibulæ are found adhering to the mucous membrane of the rectum (which is hot, dry, and red), giving rise to tenesmus and prelapse of the rectal mucous membrane; the region of the omasum is bulged and unyielding, and in the earlier stages pressure over it gives rise to an expression of inconvenience—in the later stages to one of pain; there is sometimes tympany of the rumen, but no pain is evinced on pressure being applied to it; and the same is true of the intestines, unless they become secondarily involved, from the irritation of the food or large doses of drastic purgatives. On the approach of death the animal gnashes the teeth, the eyes are retracted in the orbits, the limbs refuse to bear the weight of the body; in forced exertion the animal totters, brain symptoms supervene, and death is preceded by coma or delirium; muscular tumours are also sometimes observed. If the animal recovers, the fæces are usually for several days composed of half-masticated food from the rumen, afterwards of semi-fluid matter mixed with solid matter from the omasum, dark in colour, and having a fœtid odour—many days passing by in some cases before the whole of the ingesta from the omasum is expelled. These symptoms differ materially from those of Enteritis and true Gastritis, also from affections of the rumen. In the former, if diarrhœa is present, it is (except in the early stages) of a different character. There are in many cases colicky pains at the outset, with quick, irritable pulse, hurried respiration, infected mucous membranes, elevated temperature, pain on pressure over the whole region of the abdomen occupied by the intestines, and (usually) arrestation of the natural functions from the commencement. In impaction of the rumen there is rotundity of left side; the contents have a doughy feel, pit on pressure, and very frequently the stomach is elevated by a superficial layer of gas; there is almost invariably a grunt, and sometimes attempts at vomition, with an expression of inconvenience if pressure is applied to the organ. If aloites sets in, the grunt has a painful tone, and is replaced at intervals by an equally painful moan. There is excessive pain evinced on pressure, and if irritating medicines or cold water are introduced into the rumen. In those cases (as in vegetable poisoning) where the whole of the stomachs and the intestines are involved, no differentiation of the symptoms can be attempted. In true Gastritis there is excessive irritation from the outset, great thirst, pain on pressure over the region of the stomach, and much fever; but inasmuch as true Gastritis (except from the irritation produced by the lodgment of large masses of sand, gravel, or other foreign matter) seldom occurs without involvement of the intestines, we need not further allude to it. In impaction of the omasum, Gastro-enteritis is not, except as a secondary result, present; and I have seen an animal suffering from impaction for a fortnight without its making its appearance. As to the treatment of impaction of the omasum, I maintain that brisk purgatives are imperatively necessary at the outset,—not excessive quantities of sulphate of magnesia, as it produces nausea, but aloes and croton, with carminatives and treacle (the latter being of itself an excellent and safe purge), followed by the administration of linseed oil and stimulants, as carbonate of ammonia. If symptoms of inflammation set in, calomel and opium are more to be relied on than sedatives. The application of counter-irritants over the region of the stomach, the envelopment of the body in hot rugs, and the abstraction of blood, are all productive of benefit if judiciously employed; enemas are useless. It is simply madness to persist in the use of irritant purgatives if inflammation supervenes. The views I have expressed are the result of a large experience in some of the best dairy districts in the kingdom, and also in the dairies of several large towns and cities; and are endorsed by many of the best cattle practitioners in the midland counties with whom I have recently had opportunities of conversing on

the subject, and who, like myself, have had no difficulty in distinguishing the differentiative symptoms of true impaction of the omasum and inflammation, and derangement of the other stomachs and intestines, and of treating accordingly; and I have seen many farmers who could diagnose it with equal accuracy. In reference to the advent of brain symptoms in these affections, it is only in accordance with the well-known sympathetical bond existing between the digestive organs and the brain both in man and animals; but I know one practitioner who holds the opinion that brain symptoms are never seen in these cases except in lead poisoning. With this opinion I cannot agree, though I think that many cases are due to poisoning by lead and toxic vegetable matter, and frequently by large quantities of seeded rye-grass."

Mr. REID, Superintendent of Slaughter-houses, Leith, said that he had availed himself of the opportunities of examining the third stomachs of the cattle slaughtered at Leith, and found them always in the state described by Professor Williams and Professor Walley.

Another of the members said that the only objection he had to Professor Williams's views was that "Fardel-bound" should be considered from the outset as an inflammatory affection. No doubt at a certain stage, with the third stomach dry and hard, and inflammation of the fourth stomach existing or easily excited, drastic purgative medicine would simply destroy any little chance the animal had of recovering; and the remarks of Professor Williams and the treatment recommended by him were then all that could be desired. But he was anxious that "Fardel-bound" should not be taught as invariably resulting from inflammation of the fourth stomach and bowels. As an instance of this, he had lately seen a case—taken suddenly and seriously ill—with symptoms scarcely to be distinguished from those of an inflammatory character; and had a student or young practitioner with this theory in his head been called, and treated the case with a little oil and plenty of laudanum, belladonna, etc., he believed the cow would have died; for the basket, left fortunately behind the animal, and the excessive quantity of decorticated cotton in it, showed plainly what was the cause of the mischief. Purgatives—and strong ones too—had been given; the bowels acted moderately, and the animal lived. He was therefore anxious that a little discrimination should be made as to the inflammatory or non-inflammatory stage of the disease. He was, however, greatly indebted to Professor Williams for his remarks on this, as on many other subjects; he was certain they would be productive of a great deal of good.

Mr. ROBERTSON, Kelso, remarked that, after what had been said, it was scarcely necessary for him to say much on the subject. The term "Fardel-bound" was generally understood to refer to a peculiar deranged condition of the third stomach, giving rise to a certain train of symptoms and appearances; and he was inclined to believe that there was a great deal of truth in what Professor Williams had stated. That impaction of the third stomach, as well as of the other compartments, did take place, was too well known to be disputed. The rumen, of course, was frequently the subject of distension; the reticulum was often the receptacle of enormous quantities of foreign bodies—old leather, nails, etc. He had never, however, seen the fourth stomach impacted to the same extent as the others; but the dried and baked condition of the manyplies mostly all present had too often seen. Still he thought that the naturally dry condition of the third stomach under certain circumstances had been too much overlooked and too frequently mistaken for disease. As Professor Williams had stated—that this was the natural condition at times he had no hesitation in saying, though at a slaughter-house deprived of water, and on dry sparing keep, the dryness would be greater than in ordinary healthy circumstances. On making *post-mortems*

he had frequently found the food caked between the leaves, and the epithelial covering peeling off even on the leaves when separated; yet he did not invariably consider *that* a diseased state. As regards treatment, purgatives at the outset in cases of impaction seemed called for; but when thoroughly and for a considerable time existing, or when inflammation is present, milder measures would be productive of more benefit by allowing the parts to rest a little, and perhaps tide over the difficulty.

Professor WILLIAMS, in replying to the remarks made, thanked the members for the attention they had given to the remarks he had made at last meeting, but said that there had apparently been some misconception by some members as to his meaning. He had not mixed up or confounded "Fardel-bound" with other affections of the stomach and bowels. Of course, he knew that repletion of the omasum often existed from dry food—decorticated cotton-cake or such like—that it was often seen from loss of function or other causes in Red-water, Parturient Apoplexy, and other diseases; but what he meant was that the affection called "Fardel-bound" was most frequently nothing more nor less than inflammation to a greater or less degree of the fourth stomach and intestines—more especially of the former; that the so-called impaction in such cases was simply the result of the inflammation; and instead of giving heavy doses of purgative medicine to clear off by storm the fancied obstruction, they should try by milder soothing measures to subdue the inflammation, allow time, and thus give the organs time to recover their tone and empty themselves of their contents. Professor Williams further said that there could be no doubt that a more or less dry state of the contents of the third stomach is their normal condition. Examination of a large number of third stomachs of cattle which had been slaughtered in a state of health showed their contents hard and dry and quite reducible to powder; but he must say he had never seen the contents so dry and light that they could be blown off the hand like so much cotton, as mentioned in the course of the discussion. The Professor also mentioned that since last meeting he had received many letters from veterinary surgeons in various parts of the country stating that they approved of his views; that somewhat the same ideas (they stated singularly enough) had been floating through the minds of many of them for many years, but that they had failed to put them into definite shape; but now, having tried the treatment, they had every reason to be satisfied with the result. Professor Williams also hinted that those who differed from him in opinion had apparently had many opportunities of making *post-mortem* examinations, but that if they would adopt or try his views and treatment, these opportunities might be fewer and less frequent.

A vote of thanks to the chairman closed the proceedings.

The next meeting, being the annual general meeting, will be held on the second Wednesday of February next, when the members will dine together.

C. CUNNINGHAM, *Secretary.*

MONTREAL VETERINARY MEDICAL ASSOCIATION.

THE above Association held its fortnightly meeting on Nov. 23rd, in the lecture room of the Veterinary College. Mr. J. M. Browning, President of the Council of Agriculture, and a number of prominent citizens of Montreal were present.

Mr. C. J. ALLOWAY, V.S., read a very exhaustive paper on "Roaring," and stated that from personal experience he was prepared to attribute the majority of cases to hereditary predisposition, and to the barbarous custom

of wearing the "bearing rein." The subject gave rise to a very lively and interesting discussion, which resulted in the approval of Mr. Alloway's views.

Communications were read by Mr. Baker on "Indurated Spermatic Cord," and by Mr. Ryan on "Fracture of the Inferior Maxilla."

Mr. BROWNING, on behalf of the Council of Agriculture, presented the Association with twenty-one volumes of valuable works, and in a few well chosen remarks expressed the satisfaction felt by the Council of Agriculture at the advancement made by the profession in this province, and their intention to aid its further progress by establishing a course of French lectures in connection with the College.

Mr. J. S. HUNTER, on behalf of the visitors present, in very appropriate and highly complimentary remarks, returned thanks to the President for his invitation, and expressed the satisfaction and pleasure derived from the meeting.

At the next meeting, December 7th, Mr. W. B. Hall was to read a paper on "Inflammation of the Lungs," and Mr. C. Herbert a communication in French.

At the close of the meeting the President exhibited some measly pork which had been seized by the Meat Inspector and sent by the Health Department for microscopic examination. He explained that the measle is enclosed in a stout, fibrous envelope, surrounded by a bladder-like vesicle, containing a transparent, gelatinous substance; the head, which is irregularly four-sided, presents four large suckers, and is armed with a circle of formidable hooks. This cysticercus, when eaten by man or dogs, produces tape-worms. He was informed by the Inspector that there was no scarcity of measly pork in the city; and Prof. Osler remarked on the prevalence of "tape-worm"—no fewer than 500 cases being known—and unless meat inspection was thoroughly conducted, there is no saying what might be the result. He was glad, however, to hear that it was in contemplation to appoint a scientific examiner to assist the inspectors.

The President and Prof. Osler then placed specimens from the pork under the microscope, and the hooks and suckers were beautifully seen. It may be inferred that none of the members ate pork for breakfast in the morning.

ROYAL COLLEGE OF VETERINARY SURGEONS' EXAMINATIONS.

AT the several meetings of the Court of Examiners of the Royal College of Veterinary Surgeons, held on January 3rd, 4th, and 5th, the following students from the Royal Veterinary College, London, received the diploma of the College, and were admitted members of the profession :—

January 3rd.

Mr. Percy Boulton Spooner, London.
" Walter Vernon Tuson, Bow, Middlesex.
" William Donald Gunn, Barrackpore, India.
" James Edward Overed, London.
" George James Brooker, Twyford, Berks.

January 4th.

Mr. Henry Turner Challinor, Pendlebury, Manchester.
„ Philip Vincent, Horndon-on-the-Hill, Essex.
„ Charles Syrett Syrett, Atterton, Essex.
„ Joshua Arthur Nunn, Hill Castle, Co. Wexford.

January 5th.

Mr. Augustus John Sherrott, London.
„ Thomas Sidney Barker, St. Faith's, Norwich.
„ Francis Raymond, London.

In accordance with the resolution of the Council, the Court of Examiners reported that Mr. Joshua Arthur Nunn passed with "very great credit" on January 4th.

STUDENTS WHO HAVE PASSED THEIR FIRST EXAMINATION, ROYAL VETERINARY COLLEGE.

At the several meetings of the Court of Examiners of the Royal College of Veterinary Surgeons, held on January 8th, 9th, and 10th, the following students from the Royal Veterinary College passed their First Examination :—

January 8th.

Mr. John Square Brunskill.
„ Frederick Robert Stevens.
Mr. Alfred Charles Turner.
„ John Dring.

January 9th.

Mr. James Cook.
Mr. John Rose.
Mr. Walter Barron Hart.

January 10th.

Mr. Alfred Mitchell Eadon.
„ James Gifford Stephens.
„ Samuel Oxton Langley.
„ Edward Allen.
Mr. John Herbert Callow.
„ Fred. Walewski Forsdyke.
„ George Reed Dudgeon.
„ Benj. Brodie Allshorn.

Army Veterinary Department.

Gazette, Dec. 29, 1876.

VETERINARY DEPARTMENT.—The commission as Veterinary Surg. of William Alfred Crow to be dated 1st December, 1875, and not 29th November, 1876, as stated in the *Gazette* of 28th November, 1876.

Gazette, January 16, 1877.

5TH DRAGOON GUARDS.—Veterinary-Surg. Edwin Thomas Cheesman, from the Royal Artillery, to be Veterinary-Surg., vice Veterinary-Surg. of the First Class S. P. Constant, retired on half-pay.

4TH HUSSARS.—Veterinary-Surg. Iles Matthews, from the Veterinary Department, to be Veterinary-Surg., vice Veterinary-Surg. of the First Class T. Paton, deceased.

Obituary.

We have recently had imposed upon us the painful duty of recording the death of several valued and respected members of the veterinary profession in this country, some of whom had for many years served it honourably and well, and whose departure from among us was greatly deplored. But we may truthfully assert that we have never had to announce a death which caused us more unfeigned sorrow and regret than that of Mr. William Field, jun., of 224, Oxford Street, London. During the first week in January Mr. Field was engaged as a member of the Examining Board of the Royal College of Veterinary Surgeons, and terminated his duties therewith on Friday evening. The next day (Saturday, January 6th) he went out with the Surrey Staghounds, and during a heavy run his horse slipped in jumping a stile, and, it would appear, fell on him. According to one account, he managed to get up, walked a few steps, then dropped down and expired; another report is that he never regained consciousness, and died in a few minutes from, it was presumed, dislocation of the spine.

Educated at Hanwell Collegiate School, our deceased friend was subsequently sent to Germany, where, under the tutorship of Dr. Helensdoffer, of Offenbach, near Frankfort, he remained until 1852; then he went to Paris, in order to complete his education; and on his return to England was apprenticed to his father, Mr. William Field, whose name, and that of his family, has so long occupied a most distinguished place in our professional history. His apprenticeship terminated, he entered the Royal Veterinary College, and graduated as a veterinary surgeon on April 28th, 1858.

His subsequent career was most gratifying, and deservedly so. He was soon enlisted in the ranks of those who were earnestly striving to lift our science from the slough of despond and obloquy in which it had been allowed to lie for so many years; and serving the office of Vice-president and Councilman, in 1867 he was elected President of the Royal College of Veterinary Surgeons, which honourable position he held for two successive years. At the period of his untimely and melancholy decease, he was President of the Central Veterinary Medical Society, in the prosperity of which he evinced the warmest interest since its formation, as was evidenced by his regular attendance, his contributions to its fund of knowledge, and the improvements he was constantly striving to effect in its organization and management.

An enthusiast in his profession, and grudging and sparing no effort or sacrifice to improve it, or to give it that place in public estimation which those who know its value feel that it ought to occupy, our lost friend laboured with an honesty and disinterestedness to achieve these objects which at all times commanded respect, and even admiration; for only too frequently serious inconvenience, and sometimes something more exacting and formidable than inconvenience, had to be encountered.

The death of William Field would at any time have proved a grave misfortune to the veterinary profession in this country; at this particular crisis in our existence his loss is an irreparable calamity, which only those who know the exact state of affairs can duly estimate.

From his professional position, his personal influence—due to his uprightness, unimpeachable integrity, a singularly attractive manner, as well as his social accomplishments—and his devotion to the welfare of veterinary medicine, he was a tower of strength to our Corporation; and though he effected much—more, perhaps, than will ever be known to the majority of the profession—yet it was only a fraction of what he had purposed accomplishing. His reputation was probably as well known on the Continent as in this country, and his society was much coveted. He has left a deep gap in many friendships.

Personally, we have great reason to grieve at such a misfortune, and though our loss is doubtless more heavy than that of many others, yet the entire body of the profession has good reason to share with us, not only in the expression of this loss, but in extending their sympathy to those to whom he was a son, brother, or relative; for their bereavement is indeed great, and they need all the sympathy man can bestow.

One of his hunting friends, immediately after the accident, on looking at him in the inn to which he had been carried, was greatly affected, and remarked, "Poor Field! he was one of the best and most unselfish men I ever knew,"—words of truth, and the highest praise which could be offered to the memory of any man. We and all those who knew him will endorse them, and cherish them in loving remembrance of a good man, snatched from our midst by an inscrutable decree, and while yet in the sunrise of manhood.

It is also with much regret that we have to announce the death of Mr. Daniel Maclean, M.R.C.V.S., Glasgow, who died on the 31st December, aged 34. Mr. Maclean was the only surviving son of the late Mr. John Maclean, veterinary surgeon, Glasgow. He was educated at the Glasgow Royal High School, on leaving which he entered an accountant's office. This not falling in with his tastes, he joined the Edinburgh Veterinary College, and obtained the diploma of the Royal College of Veterinary Surgeons in 1861. He was gazetted to the Royal Artillery in 1862—having in the interval assisted the late Mr. Lawson, of Manchester. Serving for several years in India—during part of which time he was on the Remount Committee—he returned home, and was quartered at Leith Fort, where he had the opportunity of attending the lectures at his *Alma Mater*. He took a very great interest in the institution—his father having been a great friend of the late Professor Dick—and was a close observer of those events which ultimately led to a severance of the School and its then Principal, and to the foundation of the New Veterinary College, of which he was a warm supporter to the last. During the two years he was stationed at Leith Fort, he was of great service to the students—embracing, as he did, every opportunity of imparting clinical instruction.

He had a very wide circle of acquaintances and friends, took great interest in veterinary medical associations,—and when party interests or veterinary politics were discussed, perhaps, too warmly, a word or two and a laugh from Mr. Maclean would set things right again: not that he minced matters—on the contrary, he was remarkably outspoken—but what he said or did was done in such a way that no one could take offence. On the removal of his Battery to Newcastle, Mr. Maclean became tired of the army, with its small pay and slow pro-

motion, and sent in his resignation. This was reluctantly accepted by the then Principal Veterinary Surgeon, Mr. Wilkinson. His intention was to commence practice in some English town; but commercial matters that promised to turn out well falling in the way at the time, he gave up all idea of practising until these transactions had been concluded. As the time drew nigh for their termination, he became extremely anxious in mind, and his health showed symptoms of giving way. Had he lived a few months longer, his anxieties would have been at an end, and he would have been enabled to turn his attention again to the practice of his profession, unencumbered with any drawbacks. In 1873 he was elected a member of the Scottish section of the Board of Examiners of the Royal College. His death is a source of great sorrow to his many friends, who deeply sympathise with his widowed mother in the loss of her only son.

The demise of Mr. Joseph Beeson, M.R.C.V.S., of Amersham, Bucks, is reported. Mr. Beeson graduated February 4th, 1830.

That of Mr. Edward Morris Davies, M.R.C.V.S., of Shrewsbury, who graduated April 29th, 1868, is likewise announced.

Notes and News.

PEDIGREE OF THE HORSE.—An interesting lecture was given at the opening of the session of the London Institution, by Professor Huxley, on "Some recent additions to our knowledge of the Pedigree of the Horse." Mr. Huxley began with a comparison of the skeletons of the horse and polar bear, pointing out the similarity in the regions of the skull, the correspondence of the number of joints in the neck (irrespective of the length of the joints), the number of joints in the vertebræ and tail, and the points of agreement and those of divergence in the teeth. Dwelling chiefly on the marked differences in the bones of the legs of the two animals, and still more particularly on the distinction between the foot of the bear and that of the horse, the Professor proceeded to illustrate the gradual changes which fitted the horse for running over fields and roads, and left the bear suited for climbing and making his way over ice. Laying down the proposition that it belonged to the general plan of mammalia to have five toes on each foot, these became reduced to four in the pig, three in the rhinoceros and tapir, two in the cow, and one in the horse, sheathed and protected similarly to the claws of the bear. Whatever notions might be held with regard to the origin of animals, the facts of a common ground-plan in the horse and the bear were just as true as that an architect had a common ground-plan for various structures. The aim of science was to go back as far as possible and trace the various modifications. Shocking as might be the idea that the bear and the horse had a common origin, it was not more ludicrous than that of the earth moving instead of the sun rising must have appeared to common-sense business men a few centuries ago. Palæontology furnished traces of such a transition as must have taken place in the horse if the doctrine of evolution were true. Remains of the horse in the latter tertiary period were like those of the existing horse. In the remains of the upper miocene there was a little difference in the teeth, and an extra small toe like a dew-claw. The horse of that period, ancestor of the present horse, was called "hipparion." Working back into the older miocene, there had been discovered in France,

Germany, and the United States, remains of an animal first described by Cuvier under the name of the paleotherium—a creature differing from the hipparion as much as the hipparion differed from the horse. Instead of the mere dew-claw the animal had three toes, the fibula was complete throughout, and the ulva was quite a distinct bone. From this Mr. Huxley passed to the great area eastward of the Rocky Mountains, where a large inland basin received in the mud of the older tertiary period the remains of animals which had flocked about its shores. In these miocene rocks Professor Marsh found within the last six years remains of the ante-hippus, and the oldest miocene (the mezzo-hippus), in which he found the rudiment of a fourth toe. Then in the eocene was found a creature called the aura-hippus, not much larger than a fox, but having equine peculiarities, with four complete toes. So far as thus shown, the history of the horse was exactly in accordance with the doctrine of evolution. In the lacustrine deposits, which preceded the eocene, it was certain that there would be found equine remains of the mammalian form with five toes on each foot; and then the history of the horse would be as complete as any such history could be. The reason was such to his mind, that he did not care to discuss longer the theory of evolution. What was true of the horse was true of other animals, because it would be preposterous to suppose that nature had not built others on the same plan, and carried out the same fundamental idea.

FOOT-AND-MOUTH-DISEASE IN CHILI.—We learn from the *Edinburgh Medical Journal* that this malady has been conveyed to Chili, South America, by herds from the neighbouring Argentine Republic in 1871.

UNUSUAL PRECOCITY.—Mr. C. C. Phelps, of Vernon, Oneida Co., N.Y., reports to the *Country Gentleman* that he has a grade Holstein heifer, one year old last March, that began giving milk in July, and now yields about two quarts a day, having never been in calf. She was served for the first time on the 21st of June.

STOCK IN AUSTRALIA.—An Australian return shows the number of live stock in the Australian colonies at the close of the year 1875; but the return for New Zealand is for 1874. The number of sheep, without counting about 12,000 in Bass's Straits, is 63,845,719, or more than double the number in Great Britain. There are no less than 24,382,536 sheep in New South Wales, 11,749,532 in Victoria; 6,179,395 in South Australia; 7,227,774 in Queensland; 11,704,853 in New Zealand. The cattle are 6,884,527, a larger number than in Great Britain; nearly half the cattle—3,134,086—are in New South Wales; and Queensland, with its 1,812,576, stands next. The horses have increased to 935,252, the number in New South Wales being 357,696, and there being 196,184 in Victoria. The pigs are 673,729, of which number 195,950 are in New South Wales, 140,765 in Victoria, 100,562 in South Australia, 123,921 in New Zealand.

A HOG EPIZOÖTY IN AMERICA.—A new and fatal hog disease has broken out in Wabash county, Indianopolis. From 1500 to 2000 died in the vicinity of Lagro within a few weeks. It affects the lungs and windpipe, and is known as the "Blue Tooth."

THE DOG TAX IN GREAT BRITAIN.—In this country in the last financial year, as many as 1,373,936 licenses, at five shillings each, were taxed. The amount of duty charged was £343,484, and the gross amount of revenue received was £343,398 5*s*.

CATTLE PLAGUE AT ALTONA.—The Cattle Plague broke out at Altona on January 13th, and the export of cattle has been completely suspended in consequence. The disease was introduced by foreign beasts.

Correspondence.

SERVICE IN THE ARMY.

To the Editor of the VETERINARY JOURNAL.

SIR,—The September number of the *Veterinary Journal* contains some very sensible remarks from the pen of "Ubique" on this subject. With the view of pointing out a few more of the causes that tend to render service in the army so discouraging, I am induced to ask permission for a short space in your columns.

As already stated by "Ubique," the majority of young gentlemen who enter the Veterinary Department of the army take that step without possessing a correct knowledge of the prospects which attend the career of an army veterinary surgeon. One would suppose that their parents or guardians would first satisfy themselves as to the merits or demerits of such a position in the service, before launching forth their charge on such a career; yet, strange to relate, few take the trouble to ascertain what advantages the army holds forth for young men. It is not until a veterinary surgeon has served for a year or two that he begins to (as stated by "Ubique") "discover the Dead Sea nature of his apple."

During his stay at Woolwich, his expenses are considerably less than they will be when he proceeds to some out-station. While at Woolwich he is not obliged to furnish himself with horses, etc., but when he is posted to a brigade he will have to supply himself not only with them, but with regimental saddlery and a host of other little *et cæteras*, which, when reckoned up, show plainly that one needs a fair balance at Messrs. Cox's in order to meet every demand. Considering, at the same time, that one has to pay a monthly mess bill of from £9 to £12, it will require the strictest economy to make both ends meet. How few young army veterinary surgeons ever think of contrasting both sides of the picture till the matter is forced upon them!

Perhaps I may succeed in drawing a more correct view of the situation, if I trace my own career for the first couple of years' service. Having joined at Woolwich with scarcely any idea of the advantages or disadvantages of an army life, and not burdened with too great a supply of this world's wealth, I was ordered to furnish myself with the necessary outfit, which cost me something like £30. In addition to this, I had to supply myself with a certain amount of furniture, etc.

Now, it is reasonable enough that one should furnish his own apartments, but I could never see the necessity for being obliged to supply myself with uniform—until such time, at all events, as my name appeared in the *Gazette*. What can be so absurd as to compel young gentlemen to don the uniform of Her Majesty, when in reality they are not officers? Veterinary surgeons on probation possess no commission; and that being allowed, why put them to the expense of purchasing uniform? It is quite time enough for them to provide themselves, when their names appear in the *Gazette* as veterinary surgeons. Having spent sufficient time at Woolwich to gain an idea of my duties, I was ordered to an out-station, where mess expenses ran very high; and very little was left out of that wonderful "ten shillings a day" to pay two servants, supply them with clothes, and meet the hundred-and-one other little calls that attend such a position. I have not mentioned the foraging of two horses, and the wear and tear of saddlery, lest some one may remark, "Oh, but you receive three shillings and eightpence per day extra for their keep." So I did, I admit; but their original cost of £100 was *not* the result of my savings since I joined. That was about the time when a good deal of

the glitter was wearing off, and affairs began to wear a more real aspect. It is only about this time that bills begin to pour in, which "ten shillings a day" fails to meet, and the zealous soldier begins to yearn for the bright East and Rs. 37-8 per month! The army veterinary surgeon then applies to be sent to India; he sells off his horses, pays his debts, and starts for that country. In that "grilling" land he must again begin life,—furnish a house, purchase charges, etc.; but then in India he does everything in a most princely fashion, with the aid of the Indian Jew (the Battery banker), who will give the "Sahib" as much money as the "Sahib" wants—at 30 per cent

Young gentlemen having an idea of joining the Veterinary Department of the Army owe a great deal to "Ubique" and others, who have pointed out its drawbacks. Thanks to the *Veterinary Journal*, any young man who has perused its pages must have a pretty fair idea of some of the shortcomings of the army, as affecting veterinary surgeons.

I can fully endorse every word written by "Ubique" in the *Veterinary Journal;* and I am certain the editor will be ever ready to open his columns to any one who is desirous of obtaining information on army matters, previous to taking the serious step of presenting himself for admission at Woolwich; I am equally sure that there are many army veterinary surgeons who will gladly answer any questions which the young civilian may feel anxious about.

To those desirous of entering the Veterinary Department of the Army at once, or when vacancies offer, I would say *don't.* Army veterinary surgeons have been living on in hopes of getting a new warrant, which was promised months ago; but I presume it will take years before it will see the light. It was under consideration in 1870; but in consequence of the large number of applicants that came forward every year, the authorities very wisely (?) held back and pigeonholed the document.

As certain as young men enter the Department on the present miserable pittance, so certainly will they regret the step. Both in England and in India money has not the same value as formerly; living has become much more expensive of late years, and the *habits of people in the army have become more luxurious.* I could add much more to what I have already written, but I hope my remarks may have the effect of opening the eyes of aspirants for the army.

Doubtless, the military authorities will always succeed in obtaining a certain number of young men to fill the vacancies; but it is to be hoped that the present head of the Department will decline to accept any but those fitted for the service in every respect.

The Veterinary Department of the Army is doing excellent work, and its services are being recognised daily; so let us hope that some inducement will be held out for good men to come forward. The service in India is short-handed and over-worked, and men are beginning to despair of ever receiving anything from the authorities.

It is to be hoped that these few lines will meet the eyes of those for whom they are particularly intended, and that young civilians will profit by them. Rely on it, the receipts of a civil practitioner must be miserable indeed if they do not succeed in ensuring as much independence and comfort as the "ten shillings a day" of army veterinary surgeons; and let nobody in civil life suppose that his cares end when he becomes an officer,—but rather let him bear in mind the proverb that "All is not gold that glitters."

I have the honour to be,

Yours obediently,

"MAX."

PROUT *v.* PARADISE.

To the Editor of the VETERINARY JOURNAL.

SIR,—I beg to ask the favour of your inserting inthe *Veterinary Journal* a list of subscribers to the "Paradise Fund," as probably it will induce members of the profession to acknowledge more energetically the justness of appealing for a practical expression of sympathy with him. I feel it to be my duty to state that I have written to members in the principal towns of Cornwall, Devonshire, Dorsetshire, Gloucestershire and Somersetshire, and with only one exception have I received a reply. I also wrote twice with a like result to the member who had law proceedings commenced against him in reference to his examination of a horse lame from chronic Navicular Disease, and reported by myself in last July's *Veterinary Journal*. A reference to the *Lancet* will show how quickly the medical profession makes good any loss sustained by a member under such circumstances. The veterinary subscriptions sent to me were voluntary, and forwarded without solicitation.

	£	s.	d.
Gloucestershire friends ...	198	11	6
Lancashire Veterinary Association	31	0	0
Mr. Thomas Greaves ...	5	0	0
„ W. T. Stanley	2	2	0
„ W. C. Bland	2	0	0
„ A. C. Cope	1	1	0
„ John Gerrard	1	1	0
„ T. D. Broad	1	1	0
„ J. M. Broad.....	1	1	0
„ W. J. Jernyn	1	1	0
„ J. C. James	1	0	0
„ N. Leigh	1	0	0
„ J. L. Barling	1	1	0
Mr. F. W. Barling	1	1	0
„ W. Barling	1	1	0
„ Thomas Aubrey	0	10	6
„ R. C. Edwards	0	10	6
„ T. Radford	0	10	6
„ P. Mannington	0	10	0
„ J. Moon	0	10	0
„ G. P. Mallett	0	5	0
„ C. Groves	0	5	0
„ Thos. Barker	1	1	0
„ H. Olver	1	1	0
„ Editor *Veterinary Journal*	1	1	0
„ Perrin & Carless.....	2	2	0

Yours very truly,

Bath, *December* 1876. THOMAS D. BROAD.

SECTION OF THE CERVIX UTERI.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Having received Part V. of your "Veterinary Obstetrics," I observe that you refer to an article of mine on *Indurated os* and *Cervix uteri*, which appeared in the *Veterinarian* for October, 1872.

In the *first case* reported by me in that article, the subject was a seven-year-old black cow, on which I operated by incision (by making two side cuts up and out), and extracted two living calves. Both calves and cow did well.

More than this, however—and what induces me to write to you at present—is the fact that, having made a speedy, good, and perfect recovery, the said black cow was in due course again served with the bull—and the following season produced (without any uncommon disturbance) a living calf! Thus showing that incision of indurated os and cervix uteri is no bar to future productiveness of a perfectly normal character.

Considering this to be an extremely important phase of the matter, I thought it necessary to inform you.

I am, faithfully yours,

Banff. W. MACGILLIVRAY.

PRECOCITY IN THE BOVINE TRIBE.

To the Editor of the VETERINARY JOURNAL.

SIR,—In your last November number there was a case of early precocity in the bovine tribe by L. T. Barker. Once having a case of the sort, I thought I would look up some records of it, but I find that Mr. Barker's case beats mine. However, I send you the owner's notes on the case—not having kept a record of it myself. As the owner observes, the most astonishing thing was the calf being served by a two-year-old bull; both were in the same shed, and the bull was always kept tied up, so that the calf must have deliberately got under him.

Yours very truly,
T. BLAKEWAY, M.R.C..

Stourbridge, *Dec. 27th*, 1876.

"Castlebourne, Belbroughton, near Stourbridge, *Nov.* 22, 1876.

"DEAR SIR,—In reply to your inquiry as to my Jersey heifer, I have to state that she was calved July 11th, 1873; her mother was a heifer, and being a very choice one and rather delicate, I did not wean the calf, but let both run together. The calf got to my two-year-old bull, and was served during the month of January, 1874; the creature was taking milk from her mother at the time she calved a heifer calf, on the 11th of October, 1874, being fifteen months old to the day. I have her and the calf now; the latter was about the size of a lamb when calved, but I allowed the mother to rear it, and it is now two years old, and is one of the best animals in my herd. I shall be glad to give you any further information on the subject that you may require.

"I think the fact of the animal being served by a bull two years old quite as astonishing as the early age at which the heifer took him. How it was managed is a mystery to me, as she could not stand under him; and being so young and small, the wonder is she was not over-bulled. I can positively testify to these facts, as there was no other bull or bull-calf on my premises or in the neighbourhood.

"Yours truly, H. P. PARKES.

"F. Blakeway, Esq."

PROFESSIONAL PROPRIETY.

To the Editor of the VETERINARY JOURNAL.

SIR,—Your pages have recently given admission to many letters on the subject of the *status* of the profession, professional morals, etc., etc. Will you kindly give me space for a few additional remarks on this subject? Somehow or other, we do not, as a body, occupy that position in the estimation of the public which, as members of an enlightened and learned profession, we ought to claim. There are undoubtedly honourable exceptions to this rule. There are members of the veterinary profession who would adorn any position in life; there are many who can hold their own in any society—who are, in fact, gentlemen by instinct, by education, and indeed by birth. Unhappily, these are too few to leaven the mass, and the profession at large suffers from a stigma which it owes to those of its members who are deficient in gentlemanly feeling, and guilty of the meannesses which bespeak little and narrow minds. There is nothing degrading in our profession, of itself. There is no reason why we should not occupy the same social *status* as the medical man; but we do not. And why? The answer is at hand. The

respectable public sees men who are properly qualified, all around it, whom it cannot respect, and with whom it does not care to associate.

Mr. Broad, of Bath, has written a very able letter in your last month's journal, on the subject of professional morals, and I hasten to endorse the opinion which he therein expresses, that "if veterinary surgeons would only do their duty to the profession, as well as to themselves, we should soon not require many special Acts of Parliament."

Mr. Broad, also, in his letter, in speaking of consultations, says there is still a great deal of jealousy about allowing another veterinary surgeon to be called in when a case is under treatment. This is undoubtedly true; and it will continue to be the case so long as we have members of the profession who are mean enough to insinuate privately to the owners of animals that their cases have not been properly treated.

I well remember a case in point, which will serve as an illustration of the kind of individual of whom I am speaking. Some years ago, a friend of mine called into consultation a veterinary surgeon whom he did not know personally, but who was well known to him by name as being in large practice in a manufacturing town some forty miles distant. The case was a serious one, and one of a large stud of hunters; and the horse ultimately died. But the worthy and eminent gentleman—who, by-the-bye, was then, and is at the present moment, a member of Council of the Royal College of Veterinary Surgeons—did not lose the opportunity of so ingratiating himself with the stud groom, who was virtually master, as to ensure to himself the future treatment of the whole stud.

It would not here, perhaps, be out of place to state that this very eminent practitioner, by means of a very low tender for treatment of the Companies' horses, has a free railway pass on one or two lines, and uses this privilege to his own benefit and the injury of his colleagues (so far as lies in his power); inasmuch as he is not above travelling thirty, forty, or even more miles, and examining a horse or performing an operation for the same fee as would be charged by the local veterinary surgeon. It is perhaps needless to add that this practitioner is possessed of the most unblushing effrontery, and has indeed been known to call at gentlemen's houses—more particularly those who keep large studs of hunters—just to see if perchance they want a horse "fired," or require a dozen or two of cough balls!

I am afraid that this sample of the eminent consulting practitioner is by no means scarce; and all the Charters and Acts of Parliament in the world will not convert such men into gentlemen. What is the use of the ordinary practitioner striving to uphold the dignity of his profession by charging proper professional fees, when another, whose name being well known in the district, and whose reputation (like that of prophets) being the greater the farther he travels from home, is ready and anxious to perform the same services for half the money? Such men, I say fearlessly, are a disgrace to us, and hang like millstones round our necks: if not dragging us backwards, at least effectually barring our progress, and preventing us from taking that position, as a body, to which we should otherwise be entitled. I look upon it that the only way to improve this state of things is to insist upon a far higher educational standard than that which at present obtains. The preliminary examination at our colleges is little more than nominal, and I believe quite insufficient, although I am free to admit that its influence has already been felt. This, however, should be an incentive to increase the standard; as by such means alone can we ensure the admission into our ranks of men who will command the respect of the public and elevate to its proper level the name of their profession.

I am, sir, yours very faithfully,

Shrewsbury, *Jan.* 6, 1876. W. G. LITT, M.R.C.V.S.

ANSWERS TO CORRESPONDENTS.

"WIGTON."—1. We believe that the course of instruction given at the Edinburgh Veterinary College in the subjects mentioned, is quite sufficient for the minor examination of the Pharmaceutical Society. 2. Chauveau's "Anatomy of the Domesticated Animals" (published by Churchill); Finlay Dun's "Veterinary Medicines"; Bentley's "Botany"; Wilson's "Chemistry"; Kirke's "Physiology"; Green's "Pathology and Morbid Anatomy"; Williams' "Veterinary Surgery" and "Veterinary Medicine."

"VETERINARY STUDENT."—The curriculum of study at the three national veterinary schools of France is the same. In the first year the subjects are: osteology, arthrology, myology, exterior of animals, elementary botany, physics; in the second year: splanchnology, neurology, etc., chemistry, physiology, histology, botany—families; in the third year: general pathology, materia medica and therapeutics, zoology, agriculture, hygiene, internal pathology, surgery; in the fourth year: obstetrics, jurisprudence, farriery, zootechny, sanitary police, continuation of pathology and surgery. The Alfort and Lyons schools have each a farm attached, for instruction in practical zootechny and agriculture.

PROFESSOR LIAUTARD.—Only one of the persons alluded to is a member of the Royal College of Veterinary Surgeons. There can be no doubt that advertising in newspapers, and by means of pamphlets and cards, is unprofessional and blameworthy, and should be discountenanced in every way. The United States Government should be urged to suppress quackery and imposition, which appear to be rampant in America. By the Supplementary Charter, recently obtained, the Council of the R.V.C.S. is empowered to remove from the Register the name of any member who misconducts himself.

"IMPOSITION."—We are informed that a Mr. A. S. Bradley, said to be a rejected student of the Royal Veterinary College, is advertising himself as a "veterinary surgeon" in Dudley.

Communications, Letters, Books, etc., Received.

COMMUNICATIONS have been received from W. Robertson, Kelso; "Wigton"; G. A. Rolls, Arundel; J. Lambert, 17th Lancers; C. Stephenson, Newcastle-on-Tyne; C. Cunningham, Slateford; "Max"; T. D. Broad, Bath; J. Gerrard, Market Deeping; T. Blakeway, Stourbridge; W. N. Macgillivray, Banff; Professor Liautard, New York; "Veterinary Student"; W. E. Litt, Shrewsbury; A. Harthill, Louisville, Kentucky; Professor Smith, Toronto, Canada; J. W. Hill, Wolverhampton.

BOOKS: *S. Sidney*, The Book of the Horse; *W. N. Hutchinson*, Dog-Breaking; *M. Baker*, Kirke's Handbook of Physiology; *D. McEachran*, Contagious Diseases in Cattle; *D. Rueff*, Die Handswuth; *Zurn*, Die Wuthkrankheit der Hunde und ihre Gefahr; *P. R. Brücher*, Grundzuge der Mechanik des Hufes; *A. W. Blyth*, Dictionary of Hygiene and Public Health; *E. D. Mapother*, A Manual of Physiology; *E. F. Gurlt*, Ueber Thierische Missgeburten.

JOURNALS: *Medical Press; Deutsche Zeitschrift für Thiermedicin; Wochenschrift für Thierheilkunde und Viehzucht; Archives Vétérinaires; Journal de Médecine Vétérinaire; Recueil de Méd. Vétérinaire; Annales de Méd. Vétérinaires de Bruxelles; Der Thierarzt; Revue Vétérinaire.*

NEWSPAPERS: *Montreal Evening Star; Melbourne Argus* (4 copies); *Farmer; Agricultural Gazette; Newport and Market Drayton Advertiser; Field; Live Stock Journal; Sporting Gazette; National Live Stock Journal; Melbourne Leader; Australasian; North British Agriculturist; Times; British Mail; Land and Water; Times; Melbourne Leader; Melbourne Herald; Melbourne Age; Leeds Mercury; Irish Times; Birmingham Daily Gazette.*

All Communications, Books for Review, Advertisements, etc., must be addressed to the Publisher, 20, King William Street, Strand, W.C.

Morbid Specimens are to be forwarded addressed to the Editor, "Veterinary Journal," Brown Institution, Wandsworth Road, London.

Communications must be accompanied by the name of the writer, whether he may desire to have it published or not. Anonymous letters and articles cannot be inserted. The Editor does not hold himself identified with the views or opinions expressed by Contributors. Communications for insertion in the next number must arrive on or before the 15th of the present month.